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THE

Gardeners Dictionary.

Containing the METHODS of
CULTIVATING and IMPROVING
ALL SORTS OF
TREES, PLANTS, *and* FLOWERS,
FOR THE
Kitchen, *Fruit*, and *Pleaſure Gardens*;
AS ALSO
Thoſe which are uſed in MEDICINE:
WITH
DIRECTIONS for the Culture of VINEYARDS,
and Making of WINE, in *England*.
In which likewiſe are included
The PRACTICAL PARTS of HUSBANDRY.

Abridged from the laſt Folio Edition,
By the AUTHOR, *PHILIP MILLER*, F.R.S.
Member of the Botanic Academy at *Florence*, and Gardener to the Worſhipful
Company of APOTHECARIES, at their Botanic Garden, at *Chelſea*.

—— *Digna manet divina gloria ruris.* Virg. Geor.

In THREE VOLUMES.

VOL. II.

The FOURTH EDITION, Corrected and Enlarged.

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F. & A.

THE

Gardeners Dictionary.

Vol. II.

GALANTHUS, The Snow-drop.

The *Characters* are; *The Sheath of the Flower is oblong, blunt, and compreſs'd: this opens ſideways, and becomes a dry Skin: the Flower has three oblong concave Petals, which ſpread open, and are equal: in the Middle is ſituated the* Nectarium, *which is cylindrical, obtuſe, and bordered: in the Centre of the Flower is ſituated the Pointal, attended by ſix* Stamina: *the Pointal afterward becomes an oval Capſule, having three Cells, which are full of roundiſh Seeds.*

This Plant, as alſo the great Snow-drop, was by Dr. *Tournefort* ranged together under the Title of *Narciſſoleucoium*; which being a compound Name, Dr. *Linnæus* has altered it to this of *Galanthus*; and has ſeparated the great Snow-drop from this, and given the ſimple Name of *Leucoium* to that Genus.

The *Species* are;

1. Galanthus. *Lin. Hort. Cliff.* The Common Snow-drop.

2. Galanthus *flore pleno.* The double Snow-drop.

Theſe Flowers are valued for their early Appearance in the Spring; for they uſually flower in *January*, when the Ground is often covered with Snow. The ſingle Sort comes out the firſt; and though the Flowers are but ſmall, yet when they are in in Bunches, they make a very pretty Appearance: therefore theſe Roots ſhould not be planted ſingle, as is ſometimes practiſed by way of Edging to Borders; for when they are ſo diſpoſed, they make very little Appearance. But when there are twenty or more Roots growing in a cloſe Bunch, the Flowers have a very good Effect: and as theſe Flowers thrive well under Trees or Hedges, they are very proper to plant on the Sides of Wood-walks, and in Wilderneſs-quarters; where, if they are ſuffered to remain undiſturbed, the Roots will multiply exceedingly.

GALE. *Vide* Myrica.

GALEGA, Goat's-rue.

The *Characters* are;

It hath a perennial Root: the Leaves grow by Pairs, faſten'd to a Mid-rib, terminating in an odd Lobe: the Flower is of the papilionaceous Kind, conſiſting of a Standard, the Wings, and the Keel: the Pointal becomes a long taper Pod, which is filled with oblong kidney-ſhaped Seeds.

The *Species* are;

1. GALEGA *vulgaris, floribus cæruleis C. B.* Common Goat's-rue, with blue Flowers.

2. GALEGA *vulgaris, floribus penitus candicantibus. C. B.* Common Goat's-rue, with white Flowers.

3. GALEGA *vulgaris, floribus ex cæruleo purpureis. C. B.* Common Goat's-rue, with bluiſh-purple Flowers.

4. GALEGA *Africana, floribus majoribus, & ſiliquis craſſioribus. Tourn. African* Goat's-rue, with large Flowers, and thick Pods.

5. GALEGA *Americana, foliis ſubrotundis, floribus coccineis. Houſt. American* Goat's-rue, with roundiſh Leaves, and ſcarlet Flowers.

6. GALEGA *Americana fruteſcens, flore purpureo, foliis ſericeis. Plum.* Shrubby *American* Goat's-rue, with ſilken Leaves.

There are ſeveral other Varieties of this Plant, which are preſerved in curious Botanic Gardens abroad; but theſe here mentioned are the chief Sorts we have at preſent in *England.*

The firſt of theſe Plants is propagated in Gardens for medicinal Uſe; and the ſecond and third Sorts are only Varieties of the firſt, from which they only differ in the Colour of their Flowers; and are, for Variety, preſerved in ſome curious Gardens: but the fourth Sort is a diſtinct Species, having much larger Leaves, Flowers, and Pods.

Theſe Plants may be propagated either from Seeds, or by parting of their Roots. The beſt Seaſon for ſowing their Seeds is in the Beginning of *March*, in a light Soil, and an open Situation; and when the Plants are come up, you ſhould either hoe between them to deſtroy the Weeds (as is practiſed for Onions, Carrots, *&c.*), or elſe pull out the Weeds with your Hands, cutting down, or pulling up, the Plants, where they are too cloſe to each other, that thoſe left may have room to get Strength; and ſo from time to time, as the Weeds come up, you muſt be very careful to deſtroy them; as alſo to cut up, or draw out, the Plants, where they are too thick; for they ſhould not be left cloſer than eight or nine Inches Diſtance from each other. The ſecond Year theſe Plants will flower, and produce ripe Seeds: but if you intend to continue your Plants for Uſe, you ſhould cut off the Herb when it is in Flower, and not permit it to ſtand until it ſeeds; which very often cauſes the Plants to decay. Theſe Roots may alſo be parted into ſmall Heads in Autumn for Increaſe: but the ſeedling Plants are much preferable to theſe Off-ſets; ſo that the beſt way is to propagate this Plant by Seeds.

The fifth Sort was diſcovered by the late curious Botaniſt Dr. *William Houſtoun*, at *Campechy*, from whence he ſent the Seeds into *Europe*. This Plant is an Annual, and muſt be raiſed on an Hot-bed early in the Spring, and plunged into a moderate Hot-bed of Tanners Bark; and when the Plants come up, and are fit to tranſplant, they muſt be treated as hath been directed for other tender annual Plants, which are kept in the Bark-ſtove. With this Management they will flower in *July*, and in *September* they will perfect their Seeds, and the Plants will ſoon after decay.

The ſixth Sort is alſo a Native of *America*, and was diſcovered by Father *Plumier*. This is alſo propagated by Seeds, which ſhould be ſown on an Hot-bed in the Spring; and when the Plants are come up, they muſt be tranſplanted, and treated as other tender Plants from the ſame Country: it ſhould remain in the Tan-bed the firſt Year, and afterward may be placed in a moderate Stove in Winter, and in Summer muſt have free open Air.

GALENIA.

The Title of this Genus was given to it by Dr. *Linnæus*, from the famous Phyſician *Galen*.

The *Characters* are;

The Flower is apetalous: the Empalement is ſmall, and cut into four Segments: in the Centre is ſituated the Pointal, attended by eight ſlender Stamina*: the Empalement afterward turns to a roundiſh Pod, or Seed-veſſel, having two Cells, containing two oblong angular Seeds.*

There is but one *Species* of this Genus at preſent known; *viz.*

Galenia. *Lin. Hort. Cliff.* Low ſhrubby Galenia.

This is a low ſhrubby Plant, rarely growing above three Feet high: it is a Native of the *Cape of Good Hope*, from whence it was brought into the Gardens in *Holland*. There is very little Beauty in the Plant; for the Flowers are very ſmall, and ſomewhat like thoſe of the Blite, having no Petals; and the Empalement is of an herbaceous Colour. This Plant had the Name of *Sherardia* given to it by *Pontedera*, the Profeſſor of Botany at *Padua*, in Honour to Dr. *William Sherard*, a famous Botaniſt; but Monſieur *Vaillant* of *Paris* having applied that Name to another Genus of Plants, Dr. *Linnæus* has given it this.

This Plant will not live through the Winter in the open Air in *England*; ſo muſt be placed in the Greenhouſe with other hardy Exotic Plants, where it may have a large Share of Air in mild Weather; for it only requires to be protected from Froſt. In the Summer it may be expoſed in the open Air with other Plants of the ſame Country; in dry Weather it muſt be frequently watered. This may be propagated by Cuttings, which, if planted during any of the Summer-months, and watered frequently, will take Root in about five or ſix Weeks; and may then be treated as is directed for the old Plants.

GALEOPSIS, Stinking Dead-nettle.

The *Characters* are;

It hath a labiated Flower of one ſingle Leaf, whoſe Upper-lip is hollow like a Spoon; but the Under one is divided into three Segments, the middle Part being large: the Cup of the Flower is funnel ſhaped, and divided into five Parts; and each Flower is ſucceeded by four naked Seeds.

The *Species* are;

1. Galeopsis *anguſtifolia Cretica viſcoſa. Boerh. Ind. alt.* Narrow-leav'd viſcous ſtinking Dead-nettle of *Candy*.

2. Galeopsis *procerior fœtida ſpicata. Tourn.* Common Hedge-nettle.

3. Galeopsis, *ſive Urtica iners, flore luteo. J. B.* Yellow Archangel, or Dead-nettle.

4. Galeopsis *procerior fœtidiſſima, ſpica longiſſima alba. Michel.* The moſt ſtinking taller Hedge-nettle, with a long white Spike.

The firſt Sort is a Native of the Iſland of *Candia*, and ſome other Places in the *Levant*; and is too tender to live in the open Air in *England*, except in very mild Winters. This Sort is of very humble Growth, ſeldom riſing a Foot high: the Branches are very ſlender, which are garniſhed with a few very narrow Leaves, which are thinly diſpoſed on them. The Flowers grow from the Wings of the Leaves, and are of a dirty white Colour: the whole Plant is very viſcous, and ſmells like *Bitumen*. This may be propagated by ſowing the Seeds on a Bed of light Earth in the Spring; and, when the Plants are ſtrong enough to remove, ſome of them ſhould be planted in Pots, that they may be ſheltered in the Winter; and others may be planted in warm Borders, where, if the Winter proves favourable, or the Plants are defended from ſevere Froſt, they may be preſerved.

This may alſo be propagated by Cuttings, which ſhould be planted in *June* or *July*; and if they are ſhaded from the Sun in warm Weather, and duly watered, they will take Root in ſix Weeks time, and may then be treated as the ſeedling Plants: if the Plants, in Pots, are placed under an Hot-bed-frame in the Winter, where they may enjoy the open Air in mild Weather, and only covered when there is Froſt, they will ſucceed better, than if they are treated more tenderly.

The ſecond and third Sorts grow wild by the Side of Banks, and in the Woods, in moſt Parts of *England*: therefore are not admitted into Gardens; for they ſpread greatly by their creeping Roots, and become very troubleſome Weeds in Gardens.

The fourth Sort is a Native in *Italy*, from whence the Seeds have been ſent to ſeveral Botanic Gardens, where it is preſerved for the ſake of Variety: but as this ſpreads at the Root, it is not proper for a Garden; for it will be as troubleſome to deſtroy, where it has been permitted to grow, as either of the *Engliſh* Kinds.

GALEOPSIS FRUTESCENS. *Vide* Praſium.

GALLIUM, Ladies-bedſtraw, or Cheeſe-rennet.

The *Characters* are;

It is a Plant of the ſtellate Kind: the Leaves, which are neither rough nor knappy, are produced at the Joints of the Stalks, five or ſix in Number, in a radiant Form: the Flower conſiſts of one Leaf, which is expanded toward the Upper-part, and divided into ſeveral Segments: each of theſe Flowers are ſucceeded by two naked Seeds.

The *Species* are;

1 Gallium *luteum. C. B.* Yellow Ladies-bedſtraw.

2. Gallium *rubrum. C. B.* Red Ladies-bedſtraw.

3. Gallium *nigro-purpureum tenuifolium. Col.* Narrow-leav'd mountain Ladies-bedſtraw, with dark-purple Flowers.

4. Gallium *ſaxatile, glauco folio. Bocc. Rar.* Ladies-bedſtraw of the Rocks, with a glaucous Leaf.

5. Gallium *ſaxatile, glabro folio. Bocc. Rar.* Ladies bedſtraw of the Rocks, with a ſmooth Leaf.

The firſt of theſe Plants (which is the Sort commonly uſed in Medicine) is very common in moiſt Meadows, and in Paſture-grounds, in ſeveral Parts of *England*: the other Varieties are preſerved in curious Botanic Gardens; but as they are Plants of very little Beauty, and are ſubject to ſpread very far, and overrun whatever Plants grow near them, they are ſeldom cultivated in other Gardens.

Theſe Sorts may any of them be propagated by parting their Roots, which ſpread and increaſe very faſt, either in the Spring, or Autumn, and will grow in almoſt any Soil or Situation, eſpecially the firſt Sort: the other Sorts require a drier Soil, but will all grow in any Situation.

GARIDELLA [This Plant was ſo named by Dr. *Tournefort*, in Honour to Dr. *Garidel*, who was Profeſſor of Phyſic at *Aix* in *Provence*].

The *Characters* are;

It hath a roſe-ſhaped Flower, conſiſting of ſeveral Petals, which are bifid, and ranged in a circular Order; from whoſe many-leav'd Cup riſes the Pointal, which afterward becomes an Head compoſed of many oblong Pods, which open length-ways, and are full of roundiſh Seeds.

We know but one *Species* of this Plant; *viz.*

Garidella *foliis tenuiſſime diviſis. Tourn.* Garidella with very narrow-divided Leaves.

This Plant is very near akin to the *Nigella*, or Fenel-flower; to which Genus it was placed by the Writers on the Subject of Botany before Dr. *Tournefort*; and was by him ſeparated from it, as differing in the Form of the Flower.

It grows wild in *Candy*, and on Mount *Baldus* in *Italy*, as alſo in *Provence*, where it was diſcovered by Dr. *Garidel*, who ſent the Seeds to Dr. *Tournefort*, for the Royal Garden at *Paris*.

This is an annual Plant, whoſe Seeds ſhould be ſown in the Spring, on a Bed or Border of freſh light Earth, where the Plants are deſigned to remain (for they ſeldom thrive, if they are tranſplanted): when the Plants are come up, they muſt be carefully cleared from Weeds; and where they are too cloſe, they muſt be thinned, leaving them about four or five Inches apart; and as they grow up, they muſt conſtantly be kept clear from Weeds, which, if ſuffer'd to grow among the Plants, will ſoon overbear and deſtroy them. In *June* theſe Plants will flower, and in *Auguſt* the Seeds will ripen; which, if permitted to fall, will come up in Autumn, and theſe Plants will flower early in the Summer, whereby good Seeds may be always obtained.

GENISTA, *Spaniſh* Broom.

The *Characters* are;

It hath very pliant Branches: the Leaves are placed alternately, or in Whorles: the Flowers are of the pea-bloom Kind, which are ſucceeded by ſmooth Pods, containing ſeveral kidney-ſhaped Seeds in each.

The *Species* are;

1. Genista juncea. *J. B.* The yellow *Spaniſh* Broom.

2. Genista *hortenſis major Luſitanica. Vir. Luſit.* The greater *Portugal* Broom.

3. Genista *Hiſpanica pumila odoratiſſima: Tourn.* Moſt ſweet-ſcented low *Spaniſh* Broom.

4. Genista *Luſitanica, parvo flore luteo. Tourn.* *Portugal* Broom, with a ſmall yellow Flower.

5. **Geniſta** *tinctoria Germanica. C. B. P.* Green-wood, or Dyers-weed, or Wood-waxen.

6. **Geniſta** *tinctoria Auſtriaca maxima. Boerh.* Greater *Auſtrian* Dyers-weed or Wood-waxen.

7. **Geniſta** *tinctoria Germanica, foliis anguſtioribus. C. B. P. German* Dyers-weed, or Wood-waxen, with narrow Leaves.

8. **Geniſta** *tinctoria fruteſcens, foliis incanis. C. B. P.* Shrubby Dyers-weed, with hoary Leaves.

9. **Geniſta** *tinctoria Luſitanica maxima.* Piurna Luſitanorum. *Tourn.* Great *Portugal* Dyers-weed, called *Piurna* by the *Portugueſe.*

10. **Geniſta** *tinctoria latifolia Lucenſis. Tourn.* Broad-leav'd Dyers-weed of *Lucca.*

11. **Geniſta** *humilior Pannonica. Tourn.* Lower Broom of *Pannonia.*

12. **Geniſta** *ramoſa, foliis hyperici. C. B. P.* Branching Broom, with St. John-wort-leaves.

13. **Geniſta juncea,** *flore pleno.* The *Spaniſh* Broom, with a double Flower.

14. **Geniſta** *Africana fruteſcens, ruſci anguſtis foliis. Oldenl.* Shrubby *African* Broom, with narrow Butchers broom-leaves.

15. **Geniſta** *Africana arboreſcens, argentea lanugine pubeſcens. Oldenl.* Tree-like *African* Broom, covered with a ſilvery Down.

16. **Geniſta** *Africana fruteſcens ſpicata purpurea, foliis anguſtiſſimis. Oldenl.* Purple ſpiked ſhrubby *African* Broom, with very narrow Leaves.

17. **Geniſta** *Africana fruteſcens ſpicata, laricis foliis. Oldenl.* Spiked ſhrubby *African* Broom, with Larch-tree-leaves.

18. **Geniſta** *Africana fruteſcens capitata, laricis foliis. Oldenl.* Headed *African* ſhrubby Broom, with Larch-tree-leaves.

The firſt of theſe Plants is very common in the Nurſeries near *London,* and is generally ſold by the Gardeners amongſt other flowering Shrubs for Wilderneſs-quarters; where, by its long Continuance in Flower, together with its Sweetneſs, it affords an equal Pleaſure with moſt other flowering Shrubs.

The ſecond Sort ſeems to be only a Variety of the firſt, from which it differs only in Size: the Flowers of this Sort are alſo much larger and ſweeter.

The third Sort was formerly in the *Engliſh* Gardens; but has been loſt ſince the ſevere Froſt of 1740. but there are ſome young Plants which have been raiſed from Seeds, which were procured from *Spain*; ſo that this Sort may in time be more plenty in *England.*

The fourth Sort has alſo been propagated in plenty, from ſome Seeds which came from *Portugal*; but this is not ſo beautiful as the former Sorts.

The fifth Sort is very common in many Parts of *England,* where it is generally found upon ſtrong clayey Lands: this creeps by the Root; ſo will ſoon ſpread over Ground it likes: this is gathered for the Uſe of the Dyers; from whence it had the Name of Dyers-weed.

The ſixth, ſeventh, and eighth Sorts are Varieties of the laſt; from which they differ in their Growth, and the Breadth of their Leaves.

The ninth Sort grows much larger than either of the former, and continues much longer in Flower: this doth not creep by the Root; ſo deſerves a Place among other Shrubs.

The tenth Sort is of humble Growth, ſeldom riſing above two Feet and an half high: but as this Sort flowers very late in the Year, when few other Shrubs are in Beauty, it merits a Place in every good Garden: this commonly flowers in *October*; and if the Seaſon is not very ſevere, will continue in Beauty all *November*; and at that Seaſon, the Branches are loaded with yellow Flowers.

The eleventh and twelfth Sorts are alſo low Shrubs, which may be admitted to make up the Variety in Plantations of Shrubs, for their green Appearance through the Year: and although their Flowers are not very beautiful, yet, by the Contraſt which they make with the other Shrubs, they will ſet off the Plantation.

All theſe twelve Sorts are hardy enough to endure the Cold of our Winters in the open Air, except the third Sort, which is apt to ſuffer in very hard Froſt; though in the ordinary Winters this Sort will live abroad, eſpecially if it is planted in a ſheltered Situation: but as it is liable to be deſtroyed by hard Froſt, a Plant or two ſhould be ſheltered in Winter to preſerve the Kind.

The thirteenth Sort is a Variety of the firſt, which has been accidentally produced from Seeds, in ſome of the Gardens in *Germany*; but at preſent it is rare in *England*: this may be propagated by inarching it upon the common Sort, or by laying down the Branches: but the firſt Method is the ſureſt to obtain good Plants. This doth not produce Seeds; or if there were any, the Plants ſo produced would rarely happen to have double Flowers.

The other Sorts before-mentioned are all propagated by Seeds, which may be ſown in the Spring, upon a Bed of freſh light Earth, and treated in the ſame way as is commonly practiſed for raiſing of the *Spaniſh* Broom; which is ſo well known, as to need no Inſtructions in this Place.

All the Sorts of Brooms are very apt to ſend out long tough ſtringy Roots, which run deep into the Ground; therefore, if they are not tranſplanted young, they frequently miſcarry; for they have few Fibres to their Roots; ſo that when they have ſtood long in any Place, the Roots will have ſtruck deep into the Ground, which muſt be cut or torn off in tranſplanting; and this is commonly their Deſtruction.

The fourteenth, fifteenth, ſixteenth, ſeventeenth, and eighteenth Sorts are Natives of *Africa*; moſt of them grow near the *Cape of Good Hope*: theſe are too tender to live in the open Air in Winter; ſo are preſerved in Green-houſes; but they are moſt of them very rare in *England* at preſent.

Theſe may all be propagated by Seeds, which muſt be ſown upon a very moderate Hot-bed in the Spring; and when the Plants come up, they ſhould have as much free Air as the Seaſon will permit to be given them; otherwiſe they will draw up weak: as ſoon as the Plants are ſtrong enough to remove, they ſhould be planted each into a ſmall Pot filled with light Earth; and if the Pots are plunged into a very temperate Hot-bed, where the Plants may be ſhaded until they have taken Root, it will be the ſafeſt Method; and then they ſhould be inured to the open Air by degrees. In the Summer-time theſe Plants may be placed abroad in a ſheltered Situation; but in Winter they ſhould be placed in a good Green-houſe, where, in mild Weather, they ſhould have as much free Air admitted to them as poſſible; for if they are ſhut up too cloſe, and the Air excluded from them, they are very apt to grow mouldy, and then their Branches will decay.

The third Year from the Seed, the Plants will flower very ſtrong, and continue ſo to do every Year after; and then they make a fine Appearance among other Exotic Plants: and as they are green all the Year, they may deſerve to be preſerved as much as moſt other Green-houſe Plants.

Theſe Plants will grow ſeven or eight Feet high; and if they are trained up to have clear Stems, while they are young, they may afterward be formed to have regular good Heads; for they are very manageable, eſpecially when they are young: and where care is taken of them to form them handſomely, they will make a much better Appearance in the Green-houſe, during the Winter-ſeaſon.

GENISTA SPINOSA, The Furz, Whins, or Gorſe. *Vide* Ulex.

GENTIANA, Gentian or Fellwort.

The *Characters* are;

The Leaves grow by Pairs oppoſite to each other: the Cup of the Flower conſiſts of one membraneous Leaf: the Flower conſiſts of one Leaf, and is ſhaped like a Cup, being cut into four, five, or more Segments: it is ſucceeded by a membranous oval-ſhaped Fruit, ending in a ſharp Point, opening lengthwiſe into two Parts, and containing many flat roundiſh Seeds, which are border'd with a leafy Rim.

The *Species* are;

1. GENTIANA *major lutea.* C. B. P. The great Gentian, with yellow Flowers.

2. GENTIANA *aſclepiadis folio.* C. B. P. Gentian with a Swallow-wort-leaf.

3. GENTIANA *Alpina, flore magno.* J. B. Large-flower'd Gentian of the *Alps*, commonly called *Gentianella.*

4. GENTIANA *cruciata.* C. B. P. Croſs-wort Gentian.

5. GENTIANA *anguſtifolia autumnalis major.* C. B. P. Great autumnal Gentian, or *Calathian* Violet.

There are ſeveral other Sorts of Gentian, ſome of which are Natives of *England*, and others are Inhabitants of the *Alps*, and other cold mountainous Parts of *Europe*: but as they are Plants which are rarely tamed, ſo as to thrive well in Gardens, eſpecially near *London*, I ſhall paſs them over in this Place, and proceed to the Culture of thoſe here inſerted, all of which are worthy of a Place in every good Garden.

The firſt Sort, which is the true Gentian, whoſe Root is uſed in Medicine, is an Inhabitant of the Mountains near *Geneva*, and the Paſtures of the *Alps* and *Pyrenees*: this Plant is propagated by Seeds, which ſhould be ſown ſoon after they are ripe; for if it be kept long out of the Ground, it rarely grows. The beſt Method is, to ſow the Seeds in a large Pot filled with light undung'd Earth, covering them about a Quarter of an Inch thick with the ſame light Earth; then place the Pots in the Shade, where they may remain until *November*, at which time you may remove them into a Place where they may have the morning Sun: in this Situation they may remain till *March* following; by which time the young Plants will appear above-ground: you muſt then remove the Pots again into a ſhady Place, where they ſhould remain all the Summer-ſeaſon, obſerving to clear them from Weeds, as alſo to water them in dry Weather, which will greatly promote their Growth. The Autumn following they will be fit to tranſplant; at which time you ſhould prepare a ſhady moiſt Border, that ſhould be well dug and looſened; then ſhake the Earth out of the Pots, by which means you will the more readily take them out without hurting their Roots. The Diſtance they ſhould be allowed, if deſigned to remain for good, muſt be fourteen Inches ſquare: but if they are intended to be removed again, four or ſix Inches will be ſufficient. In planting them, you muſt obſerve to make deep Holes; ſo that the Roots, which generally grow long, may be placed full as deep as they are in Length, that no Part may appear above-ground: nor ſhould they be bent at the Bottom, which would check their downright Growth, and greatly injure them. The beſt Seaſon to tranſplant them is in the Beginning of *October*, juſt as they begin to drop their Leaves: for as theſe Plants are Natives of cold Countries, if they remain till after *Chriſtmas* unremoved, they will begin to ſhoot; therefore it will be unſafe to tranſplant them after.

In about five or ſix Years time, if the Plants thrive well, and are not diſturbed, they will begin to flower, and will produce good Seeds; ſo that it will not be difficult to have them in great Plenty: but as it is hardly worth cultivating for medicinal Uſe, it being generally imported hither at a very moderate Price, the Beauty thereof is not ſuch as would recommend the having it in great Quantities, though a few of them will do very well to make a Variety.

The ſecond and fourth Sorts are at preſent very uncommon in *England*, and only to be found in ſome curious Gardens; theſe are both of them very pretty Ornaments to a Garden: they are propagated by parting their Roots in Autumn, and require a pretty ſtrong Soil, and a ſhady Situation.

The third Sort was formerly more common in the Gardens near *London* than it is at preſent; but in ſome old Country Gardens it is ſtill frequently to be met with: this is a very beautiful Plant, and well worth propagating: it is increaſed by parting the Roots in Autumn. Theſe Plants require a ſtrong, moiſt, cool Soil, and ſhould be planted where they may have only the morning Sun; for if they are too much expoſed to Heat, they are very ſubject to decay; nor do they care to be often tranſplanted, which will alſo make them poor and weak: and I am apt to believe, that this has occaſioned their preſent Scarcity near *London*, where People are too apt to part and divide Plants often, in order to increaſe them, and thereby frequently deſtroy their whole Stock.

The fifth Sort grows wild in divers Parts of the North, as in *Yorkſhire*, *Cumberland*, and *Northumberland*; and is equal to any of the above-mentioned Kinds for Beauty; but is rarely to be found near *London*. The Roots of this Plant may be brought from the Places of its natural Growth, and planted in a cool, moiſt, undung'd Soil, where it will grow, provided it be not under the Drip of Trees, which this Plant by no means cares for; nor ſhould it be often removed, but ſuffered to remain (as was ſaid above); by which means it will thrive, and produce beautiful Flowers.

GENTIANELLA. *Vide* Gentiana.

GERANIUM, Crane's-bill.

The *Characters* are;

The Leaves are, for the moſt part, conjugate: the Cup of the Flower conſiſts of one Leaf, which is divided *into five Parts, and expanded in form of a Star: the Flowers of the* European *Kinds conſiſt of five Leaves; and thoſe of the* African *Sorts, for the moſt part, of four, ſomewhat reſembling a creſted or lipped Flower, with ten* Stamina *ſurrounding the Ovary: the Fruit is of a pentagonal Figure, with a long Beak, containing at the Baſe five Seed-veſſels, in each of which is contained one tailed Seed, which, when ripe, is caſt forth by the twiſting of the Beak.*

The *Species* are;

1. GERANIUM *batrachioides, Gratia Dei Germanorum. C. B. P.* Crane's-bill with a Crowfoot leaf, and large blue Flowers.

2. GERANIUM *batrachioides, Gratia Dei Germanorum, flore albo. Boerh. Ind.* Crowfoot-leav'd Crane's-bill, with a white Flower.

3. GERANIUM *batrachioides, Gratia Dei Germanorum, flore variegato. C. B. P.* Crowfoot-leav'd Crane's-bill, with a ſtriped Flower.

4. GERANIUM *batrachioides, longius radicatum, odoratum. J. B.* Long-rooted ſweet ſmelling Crane's-bill, with a Crowfoot-leaf.

5. GERANIUM *ſanguineum, maximo flore. H. Ox.* Bloody Crane's-bill, with a large Flower.

6. GERANIUM *ſanguineum, cauliculis erectis, folio obſcure virenti, floribus minoribus. H. L.* Bloody Crane's bill, with upright Stalks, dark-green Leaves, and ſmall Flowers.

7. GERANIUM *hæmatodes, foliis majoribus pallidioribus, altius inciſis. Raii Syn.* Bloody Crane's-bill, with larger, paler, and more deeply-divided Leaves.

8. GERANIUM *hæmatodes Lancaſtrenſe, flore eleganter ſtriato. Raii Hiſt.* Bloody Crane's-bill, with a variegated Flower.

9. GENANIUM 5. *nodoſum Plateau. Cluſ. Hiſt.* Knotty Crane's-bill.

10. GERANIUM *phæum ſive fuſcum, petalis reflexis, folio non maculoſo. H. L.* Brown Crane's-bill, with reflexed Petals, and Leaves not ſpotted.

11. GERANIUM *phæum ſive fuſcum, petalis rectis ſeu planis, folio maculato. H. L.* Brown Crane's-bill, with plain Petals, and ſpotted Leaves.

12. GERANIUM *Romanum, verſicolor ſive ſtriatum. Park. Par-Roman* Crane's-bill, with ſtriped Flowers.

13. GERANIUM *Alpinum, coriandri folio, longius radicatum, flore purpureo majore. Michel.* Long-rooted Crane's-bill of the *Alps*, with a Coriander-leaf, and a large purple Flower.

14. GERANIUM *batrachioides montanum noſtras. Ger.* Mountain Crane's-bill, with a Crowfoot-leaf.

15. GERANIUM *Orientale columbinum, flore maximo, aſphodeli radice. T. Cor.* Oriental Dove's-foot Crane's-bill, with an Aſphodel-root, and a large Flower.

16. GERANIUM *cicutæ folio, moſchatum. C. B. P.* Muſked Crane's-bill of *Muſcovy*.

17. GERANIUM *latifolium annuum, cæruleo flore, acu longiſſima. H. Ox.* Broad-leav'd annnal Crane's-bill, with a blue Flower, and a very long Beak.

18. GERANIUM *myrrhinum tenuifolium, flore amplo purpureo. Bar. Obſ.* Fine cut-leav'd Crane's-bill, with an ample purple Flower.

19. GERANIUM *Africanum arboreſcens, ibiſci folio rotundo, carlinæ odore. H. L. African* Tree Crane's-bill, with a round Marſhmallow-leaf, and a Smell of the Carline-thiſtle.

20. GERANIUM *Africanum arboreſcens, ibiſci folio anguloſo, floribus amplis purpureis. Phil. Tranſ.* 388. *African* Tree Crane's-bill, with an angular Marſhmallow-leaf, and large purple Flowers.

21. GERANIUM *Africanum arboreſcens, alchimillæ hirſuto folio, floribus rubicundis. Com. Præl. African* Tree Crane's-bill, with an hairy Ladies-mantle-leaf, and red Flowers.

22. GERANIUM *Africanum arboreſcens, malvæ folio plano lucido, flore elegantiſſime kermeſino. Di van Leur. Boerh. Ind. African* Tree Crane's-bill, with a plain ſhining Mallow-leaf, and an elegant ſcarlet Flower.

23. GERANIUM *Africanum fruteſcens, malvæ folio odorato laciniato. H. L. African* ſhrubby Crane's-bill, with a jagged ſweet-ſmelling Mallow-leaf.

24. GERANIUM *Africanum fruteſcens, malvæ folio laciniato, odorato inſtar meliſſæ, flore purpuraſcente. Boerh. Ind. African* ſhrubby Crane's-bill, with a jagged Mallow-leaf, ſmelling like Balm, and a purpliſh-colour'd Flower.

25. GERANIUM *Africanum arboreſcens, malvæ folio mucronato, petalis florum inferioribus vix conſpicuis. Phil. Tranſ. African* Tree Crane's-bill, with a pointed Mallow-leaf, and the under Petals of the Flower ſcarce diſcernible.

26. GERANIUM *Africanum fruteſcens, folio craſſo & glauco, acetoſæ ſapore. Com Præl. African* ſhrubby Crane's-bill, with a thick glaucous Leaf, and an acid Taſte like Sorrel.

27. GERANIUM *Africanum fruteſcens, chelidonii folio, petalis florum anguſtis albidis, carnoſo caudice. Phil. Tranſ. Geranium Africanum, folio alceæ, flore albo. Boerh. Ind. alt. African* ſhrubby Crane's-bill, with a Celandine-leaf, the Petals of the Flower white and narrow, and a fleſhy Stalk.

28. GERANIUM *Africanum noctu olens, tuberoſum & nodoſum, aquilegiæ foliis. H. L. African* Crane's-bill, ſmelling ſweet in the Night, with knotty tuberoſe Stalks, and Leaves like Columbine.

29. GERANIUM *Africanum, folio alceæ, flore coccineo fulgidiſſimo. Boerh. Ind. alt. Geranium Surianenſe, chelidonii folio, flore coccineo, petalis inæqualibus. Hort. Piſſ. African* Crane's-bill, with a Vervain-mallow-leaf, and a deep-ſcarlet Flower.

30. GERANIUM *Africanum arboreſcens, alchimillæ folio hirſuto, elegantiſſime variegato, floribus rubicundis. Boerh. Ind. alt. African* Tree Crane's-bill, with an hairy Ladies-mantle-leaf elegantly ſtriped, and red Flowers, commonly called the ſtriped Geranium.

31. GERANIUM *Africanum, foliis inferioribus aſari, ſuperioribus ſtaphidiſagriæ, maculatis, ſplendentibus, & acetoſæ ſapore. Com. Præl. African* Crane's-bill, with the under Leaves like Aſarabacca, and the upper Leaves like Staveſacre, ſhining, ſpotted, and taſting like Sorrel.

32. GERANIUM *Africanum, alchimillæ hirſuto folio, floribus albidis. H. L. African* Crane's-bill, with an hairy Ladies-mantle-leaf, and whitiſh Flowers.

33. GERANIUM *Africanum, folio malvæ craſſo molli odoratiſſimo, floſculo pentapetalo albo. Boerh. Ind. alt. African* Crane's-bill, with a thick ſoft ſweet-ſmelling Mallow-leaf, and a ſmall white Flower conſiſting of five Leaves.

34. GERANIUM *Americanum, noctu olens, radice tuberoſa, triſte. Corn. H. Ox. American* tuberoſe-rooted Crane's-bill, ſmelling ſweet in the Night.

35. Geranium *Africanum tuberoſum, anemones folio, incarnato flore. Par. Bat.* Tuberoſe-rooted *African* Crane's-bill, with an Anemony-leaf, and a pale fleſh-colour'd Flower.

36. Geranium *Æthiopicum, noctu olens, radice tuberoſa, foliis myrrhidis anguſtioribus. Breyn. Cent.* Night ſweet-ſmelling *Ethiopian* Crane's-bill, with a tuberoſe Root, and narrow Cicely-leaves.

37. Geranium *Africanum, noctu olens, folio vitis hirſuto, tuberoſum. H. A.* Night ſweet-ſmelling *African* Crane's-bill, with an hairy Vine-leaf, and a tuberoſe Root.

38. Geranium *Africanum, folio coriandri, floribus incarnatis, minus. H. L. African* Crane's-bill, with a Coriander-leaf, and a leſſer fleſh-colour'd Flower.

39. Geranium *Africanum, uvæ criſpæ folio, floribus exiguis rubellis. H. L. African* Crane's-bill, with a Gooſberry-leaf, and ſmall rediſh Flowers.

40. Geranium *Africanum, betonicæ folio, procumbens, floribus parvis eleganter variegatis. Pluk. Alm. African* trailing Crane's bill, with a Betony-leaf, and ſmall beautiful-ſtriped Flower.

The fifteen firſt-mentioned Sorts are abiding Plants: the Leaves of ſome of them decay in Winter; but their Roots, remaining, ſhoot again early in the Spring: ſome of theſe Sorts are common in ſeveral Parts of *England*; yet they deſerve a Place in every good Garden, where, if they are rightly diſpoſed, they will have a good Effect, by adding to the Variety; and as they are very hardy Plants, and require but little Care in their Culture, growing in almoſt any Soil or Situation, they are very proper for large Gardens, to be planted in wide Borders, or by the Sides of Wilderneſſes, and other ſhady Walks, where few other Plants will thrive; and theſe continuing in Flower moſt Part of the Summer, greatly add to the Beauty of ſuch Places.

Theſe are all increaſed by parting their Roots: the beſt Seaſon for which is in *October*, that they may take Root before the hard Froſts begin; or elſe in *February*, that they may get Strength before the great Heat and Drought come on, which would occaſion their Flowers to be ſmall, and but few in Number. Theſe Roots may remain two or three Years unremoved, according as you find them increaſe and ſpread; for ſome Sorts will not ſpread ſo far in three Years, as others will do in one: whereas, if the ſpreading Kinds are ſuffered to grow undiſturbed, for two or three Years, they will ſpread the whole Width of the Border where they are planted; ſo that if they are not tranſplanted often, their Roots ſhould be cut round every Year, to keep them within Compaſs.

Theſe Sorts may alſo be propagated by Seeds, which they afford every Year in great Plenty: but as they are increaſed very faſt in the former Way, it is hardly worth while to ſow their Seeds.

The ſixteenth, ſeventeenth, and eighteenth Sorts are annual Plants, and ſhould either be ſown every Year, or their Seeds permitted to ſcatter themſelves; the latter of which is the ſureſt Method: for the Plants will come up in Autumn, ſoon after the Seeds fall, and will abide the Winter, and flower early the ſucceeding Spring; whereby you will always be ſure to have their Seeds perfected, which does not conſtantly happen to thoſe ſown in the Spring. The ſixteenth Sort is preſerved in many Gardens, for the ſweet Scent its Leaves afford when rubbed between the Fingers, which occaſioned its being called Muſk or *Muſcovy*. There is but little Beauty in the Flowers of this Plant; however, it may be admitted to have a Place in ſome odd Corner, or ſhady Border, in a Garden, for Variety, it being very hardy, and will thrive in almoſt any Soil or Situation.

The ſeventeenth and eighteenth Sorts produce very handſome Flowers; and as they are Plants which take up but little room, and require very little Trouble to cultivate them, it is worth while to allow them a Place, for Variety, in ſome Corner of the Garden, theſe being both as hardy as the former Sort.

The nineteenth, twentieth, twenty-firſt, twenty-ſecond, twenty-third, twenty-fourth, twenty-ſixth, twenty-ſeventh, twenty-eighth, twenty-ninth, thirtieth, and thirty-firſt Sorts are Natives of a warmer Climate than ours, and require to be ſheltered in Winter.

Theſe, being all ſhrubby Plants, may be propagated by planting their Cuttings, any time in Summer, in a Bed of light freſh Earth; obſerving to water and ſhade them until they have taken Root, which will be in about a Month's time after planting; being careful to take off the Mats, or other Covering, every Night, that the Cuttings may have the Benefit of the Dews; as alſo, whenever there may happen to be any Showers in the Day-time, never to cover them but when the Sun ſhines very hot upon the Bed.

In this Place they may remain two Months from their firſt planting, by which time they will be rooted ſufficient for tranſplanting: you muſt therefore prepare ſome Pots; theſe ſhould be filled with freſh light Earth; and having taken the Plants up, with as much Earth as poſſible to their Roots, you ſhould plant each Plant into a ſeparate Pot, removing them into a ſhady Situation, until they have taken freſh Root, obſerving to water them frequently, as they may have Occaſion: and when they are rooted, you ſhould remove them to a more expoſed Situation to harden them; in which Place they ſhould remain until the Middle of *October*, when the Mornings begin to be froſty; at which time they ought to be removed into the Green-houſe, where they ſhould be placed as near the Windows as poſſible; obſerving to let the Windows be open, that they may have as much free Air as poſſible, until the Weather begins to be very cold.

Theſe Plants, during the Winter-ſeaſon, will require to be often refreſhed with Water; but they ſhould never have too much given them at once: they ſhould alſo be frequently pick'd, to take off all dead or decayed Leaves, which, if ſuffered to remain upon them, will not only render the Plants unſightly, but alſo infect the Air of the Green-houſe, eſpecially when the Windows are kept ſhut cloſe, and thereby become injurious to all the Plants placed therein.

You muſt alſo obſerve to ſet theſe where they may be clear from the Heads of other Plants; for they will by no means bear to be ſtifled, which would cauſe them to caſt their Leaves: nor do they require to be kept very warm in Winter; for if they are but ſcreened from the Froſt, it will be ſufficient; and all artificial Warmths are prejudicial to theſe Plants.

The twenty-ninth Sort is very ſubject to caſt its Leaves in Autumn, and thereby appears to unſkilful Perſons as dead; but if it be ſuffered to remain in the Pot undiſturbed, and very little Water given to it during this Seaſon, it will come out again in Winter as freſh and lively as before; but much Moiſture, during this State of Inactivity, very often deſtroys this Plant. This, for the Richneſs of the Colour of its Flowers, vaſtly exceeds all the other Sorts; tho' the 22d Sort is a very beautiful Flower, and its Continuance moſt Part of the Summer and Autumn in Flower, renders it very valuable; as is the thirtieth Sort, for the Beauty of its variegated Leaves.

The twenty-ſecond and twenty-third Sorts are of humbler Growth than the former, tho' they are Natives of the ſame Country, and therefore require the ſame Defence in Winter; theſe may alſo be propagated by Heads cut off from the old Plants, and treated as was directed for the Cuttings of the ſhrubby Kinds. The thirty-ſecond Sort is very ſubject to ramble, and affords Supply enough of Cuttings; but the thirty-third Sort increaſes much ſlower: this Plant is of an uncommon ſtrong ſweet Scent; the Leaves, when touch'd, ſmelling ſomewhat like Anis-ſeed: but the Flowers of neither of theſe two Sorts are very beautiful; however, they ſhould have a Place in all Collections of Plants, for Variety-ſake.

Theſe Plants may alſo be propagated by ſowing their Seeds in the Spring of the Year upon a moderate Hot-bed; and when they are come up two Inches high, they ſhould be planted into another Bed, with a little warm Dung under it, to promote their Rooting: in this Bed they may be planted about ſix Inches ſquare; and when they are rooted, you ſhould harden them by degrees; ſo that as the Weather becomes warmer, they may the better endure the open Air: in *July* you ſhould tranſplant them into Pots, as was before directed for the Cuttings, and manage them in the ſame manner. During the Summer-ſeaſon theſe Plants ſhould be ſet abroad with Myrtles, Oleanders, and other Green-houſe Plants, where, being artfully intermixed therewith, they add greatly to the Variety, and continue flowering moſt Part of the Year.

The thirty-fourth, thirty-fifth, thirty-ſixth, and thirty-ſeventh Sorts have all knobby Roots, and increaſe but ſlowly thereby; therefore, in order to have a Stock of theſe Plants, you ſhould carefully gather their Seeds, which they ſeldom fail to produce every Year, and ſow them as was directed for the other *African* Sorts, upon a moderate Hot-bed, managing them alſo accordingly, with this Difference only; *viz.* that they ſhould have leſs Water; and the Pots in which they are planted ſhould be ſmaller, eſpecially at firſt; for as they are Plants which make but ſmall Roots, the putting them into large Pots is very prejudicial to them. Theſe are all eſteemed for the Beauty of their Flowers, and their agreeable Sweetneſs in the Evening after the Sun has left them; for, before that, you cannot perceive any Scent in them, tho' afterwards it becomes ſo ſtrong as to perfume the Air to ſome Diſtance from the Place where they ſtand. This, I ſuppoſe, may be accounted for from the Warmth of the Sun rarefying thoſe *Effluvia*, ſo as to be too minute to ſtrike our Organs of ſmelling with any Force while the Heat is continued; but when the Cool of the Evening approaches, theſe

Effluvia are of larger Bulk, and become perceptible to us in proportion thereto.

During the Summer-ſeaſon theſe Plants may be expoſed, amongſt other Exotics, in the open Air, being very careful not to give them too much Water, which often occaſions their rotting, eſpecially towards Autumn, when their green Leaves begin to decay, at which time they ſhould have it very ſparingly; and if the Seaſon ſhould prove very wet, you ſhould lay the Pots on one Side, or remove them under Shelter, to protect them from it: and about the Beginning of *October* you ſhould carry them into the Green-houſe, placing them as near as poſſible to the Windows, that they may have a good Quantity of free Air when the Windows are opened; for if they are defended from Froſt, and much Wet, it will be ſufficient, they not being extreme tender; nor will they ever require any artificial Warmth in Winter, but, on the contrary, as much Air as poſſible in mild Weather.

These Plants require a very light ſandy Soil, but ſhould not have too much Dung. The Mixture of Earth, in which I find them grow beſt, is as follows: 1ſt, Take a Quantity of freſh Earth from a Paſture-ground that is inclining to a Sand; and if you have time for the Turf to rot before you have Occaſion for it, add that to the Earth; then mix about a third or fourth Part as much Sea-ſand, in proportion to the Lightneſs of your Soil; add to this about a fourth Part as much rotten Tanners Bark: mix all well together, and let it lie in an Heap two or three Months before you have Occaſion for it, obſerving to turn it over two or three times, that the Mixtures may be the better united; and if, before it is uſed, you paſs it through a rough Screen to take out all large Stones, Roots, &c. it will be the better: but by no means ſift the Earth fine, as is the Practice of many People; for I am ſure it is doing a great deal of Damage, as was ſhewn under the Article *Abies*: when theſe Plants are potted, you ſhould carefully lay ſome Stones or Shreds in the Bottom of the Pots, that the Water may the better paſs off: nor ſhould you plant them in Pots too large; which is equally injurious to them, as was before-mentioned.

The thirty-eighth and thirty-ninth Sorts are Plants of ſhorter Duration than thoſe above-mentioned, rarely continuing above two Years; ſo that, in order to preſerve theſe, you ſhould ſave the Seeds every Year, which ſhould be ſown upon a moderate Hot-bed in the Spring, and managed as was directed for the laſt-mentioned Sorts: theſe will often produce Flowers and Seeds the ſame Summer; but the ſecond Year, provided they are defended from the Froſt in Winter, they will flower early, and perfect their Seeds before Autumn.

The fortieth Sort is annual: this muſt be ſown on a moderate Hot-bed, and the Plants brought forward in the Spring; but when they begin to flower, they muſt be ſet in the open Air, otherwiſe the Flowers will fall away without producing any Seeds. This, tho' a Plant of no great Beauty, is worthy of a Place in every Collection of curious Plants.

There are a great Number of Geraniums, which I have not here mentioned, many of which are Natives of *England*, and others were brought from divers Parts of *Europe*; but as theſe, for the moſt part, are annual Plants of no Beauty or Uſe, I thought it needleſs to trouble myſelf or the Reader therewith.

GERMANDER. *Vide* Chamædrys.

GESNERA.

This Plant was ſo named by Father *Plumier*, who diſcovered it in *America*, in Honour to *Conrade Geſner*, a very learned Botaniſt, and Natural Hiſtorian.

The *Characters* are;

It hath an anomalous perſonated Flower, conſiſting of one Leaf, from whoſe Cup ariſes the Pointal, fixed like a Nail in the hinder Part of the Flower; which afterward becomes a membranaceous Fruit, divided into two Cells, which are filled with ſmall Seeds.

The *Species* are;

1. Gesnera *humilis, flore flaveſcente. Plum. Nov. Gen.* Low Geſnera, with a yellowiſh Flower.

2. Gesnera *amplo digitalis folio tomentoſo. Plum. Nov. Gen.* Geſnera with a large woolly Fox-glove-leaf.

3. Gesnera *arboreſcens, amplo flore fimbriato & maculoſo. Plum. Nov. Gen.* Tree-like Geſnera, with a large furbelowed and ſpotted Flower.

4. Gesnera *foliis lanceolatis ſerratis, pedunculo terminatrici laxo ſpicato. Lin. Hort. Cliff.* Geſnera with ſawed ſpear-ſhaped Leaves, and the Stalk terminating in a looſe Spike of Flowers, commonly called the *Canary* Fox-glove.

The firſt and ſecond Sorts were found by the late Dr. *William Houſtoun* in *Jamaica*, from whence he ſent their Seeds to *England*; but by their being a long time out of the Ground, there was not any of them which grew. The third Sort was diſcovered by Father *Plumier* at *Martinico*: this Sort riſes to the Height of eight or ten Feet, and has a woody Stem; but the other two Sorts ſeldom riſe above three Feet high.

Theſe Plants are propagated by Seeds, which ſhould be ſown as ſoon as poſſible after they are ripe; for, being very ſmall and light, if they are kept long out of the Ground, they will not grow: therefore the ſureſt Method to obtain theſe Plants is, to procure them in Tubs of Earth from *America*. The Seeds ſhould be ſown in the Tubs filled with freſh Earth, and placed in a ſhady Situation; and when the Plants come up, they muſt be frequently watered, and kept clear from Weeds. Theſe Tubs ſhould remain in the Country, until the Plants are pretty ſtrong; for if they are ſent over too young, they will be in great Danger of periſhing before they arrive in *England*. When they are put on board the Ship, they ſhould be covered in the Heat of the Day with Tarpaulins, to ſcreen them from the violent Heat of the Sun; as alſo in bad Weather, to prevent the Salt-water from waſhing of them. During their Paſſage they ſhould be often refreſhed with Water, while they are in a warm Latitude; and ſhould have as much Air as poſſible, when the Weather will permit; but as they arrive in a cooler Lititude, they muſt have a leſs Quantity of Water given them, and ſhould be ſcreened from the Cold.

When theſe Plants arrive in *England*, they ſhould be carefully taken out of the Boxes, and each planted into a Pot filled with rich light Earth, and then plunged into an Hot-bed of Tanners Bark, obſerving to water them, and ſcreen them from the Heat of the Sun until they have taken Root; after which time they ſhould have freſh Air admitted to them in proportion to the Warmth of the Seaſon, and muſt be frequently watered. In this Bed the Plants may remain until *Michaelmas*, when they ſhould be placed in the Bark-ſtove, where, if they are kept in a temperate Warmth, they will make good Progreſs, and the ſecond Year will produce their Flowers, when they will make a fine Appearance: for they produce long Spikes of Flowers, which are ſhaped ſomewhat like thoſe of the Fox-glove. Theſe Plants do not continue many Years, ſo that new Plants ſhould be frequently raiſed; for after the Sorts are procured from Abroad, they will perfect their Seeds in *England*, if they are carefully managed: but it will be the ſureſt Method to raiſe the Plants, if the Seeds are ſown ſoon after they are ripe: and if the Seeds, procured from Abroad, are ſent over in the Pods, ſoon after they are ripe, and ſown when they arrive in *England*, they will often ſucceed; eſpecially the ſecond Sort, which has grown with me very well.

The fourth Sort has been many Years preſerved in ſome of the curious *Engliſh* Gardens. This Plant is a Native of the *Canary* Iſlands; ſo is too tender to live in the open Air in *England:* it is therefore kept in Pots, and preſerved in Green-houſes. This Sort hath woody Stems, and will riſe to the Height of three Feet, and divides into many Branches, each of which will produce a Spike of pale orange-colour'd Flowers at their Top; and theſe flower frequently at different Seaſons, ſo that the Plants are ſeldom long deſtitute of Flowers, during the Summer months; and ſometimes they will flower in Winter, which renders this Plant more valuable.

This Sort is propagated by Seeds; for although there have been ſome Plants raiſed by Cuttings, yet it is very rare they can be ſo propagated. Theſe Seeds frequently ripen in *England*; but they ſhould be ſown as ſoon as they are ripe, in Pots filled with freſh Earth, and covered very lightly with Earth; and the Pots ſhould be placed in a ſhady Situation, and duly watered in dry Weather: and in Autumn, when the cold Weather comes on, the Pots muſt be ſheltered under an Hot-bed-frame, which ſhould have the Glaſſes taken off every Day in mild Weather; for theſe Seeds only require to be protected from Froſt. With this Management, I have had Plenty of the Plants come up the following Spring; and this is the only ſure Method to obtain theſe Plants: for if the Seeds are not ſown till the next Spring, they ſeldom grow; and if they do, it is not till the Spring following that the Plants come up.

The Plants of this Sort muſt be ſet abroad toward the Middle of *May*, in a ſheltered Situation, and will require frequent Watering in dry Weather; and in Autumn they muſt be removed into the Green-houſe, placing them where they may have free Air in mild Weather, otherwiſe they will grow mouldy, and decay.

GEUM, Hairy Kidneywort, or Sanicle.

The *Characters* are;

The Cup of the Flower is quinquefid: the Flower conſiſts of five Leaves, which expand in form of a Roſe, having eight or ten Stamina *or Threads ſurrounding the Ovary: the Fruit is roundiſh, and is ſplit into two Horns at the Top: this becomes a bicapſular Seed-veſſel containing many ſmall Seeds.*

The *Species* are;

1. Geum *paluſtre minus, foliis oblongis crenatis. Tourn.* Hairy Kidney-wort, or Water Sanicle.

2. Geum *anguſtifolium autumnale, flore luteo guttato. Tourn.* Narrow-leav'd autumnal Sanicle, with a yellow-ſpotted Flower.

3. Geum *rotundifolium majus. Tourn.* Great round-leav'd ſpotted Sanicle.

4. Geum *folio ſubrotundo majori, piſtillo floris rubro. Tourn. London* Pride, or None-ſo-pretty.

5. Geum *rotundifolium minus. Tourn.* Leſſer round-leav'd Sanicle.

6. Geum *folio circinato, piſtillo floris pallido. Tourn.* Round-leav'd Sanicle, with a pale Pointal.

7. Geum *folio ſubrotundo minori, piſtillo floris rubro. Tourn.* Sanicle with a leſſer roundiſh Leaf, and a red Pointal.

8. Geum *folio circinato, acute crenato, piſtillo floris rubro. Tourn.* Sanicle with a round ſharp jagged Leaf, and a red Pointal

9. Geum *folio ſubrotundo minimo. Tourn.* Sanicle with a very ſmall roundiſh Leaf.

10. Geum *Creticum, folio circinato villoſo, flore magno albo. Tourn. Cor. Candy* Sanicle, with a round hairy Leaf, and a large white Flower.

11. Geum *Orientale rotundifolium ſupinum, flore aureo. Tourn. Cor.* Low round-leav'd Eaſtern Sanicle, with a golden Flower.

12. Geum *Orientale, cymbalariæ folio molli & glabro, flore magno albo. Tourn. Cor.* Eaſtern Sanicle, with a ſoft ſmooth Ivywort-leaf, and a large white Flower.

The firſt of theſe Plants is found wild upon the Mountains of *Wales* and *Weſtmorland*; but will grow, if tranſplanted into a cool moiſt Place in a Garden: but the ſureſt Method is to plant them in Pots filled with ſtrong poor Earth, and place them in a ſhady Situation, where, if they are conſtantly watered in dry Weather, they will thrive, and produce Flowers.

The ſecond is found in ſome Parts of *Cheſhire*: this alſo delights in a ſtrong moiſt Soil, and a ſhady Situation: nor ſhould theſe Plants be often tranſplanted; for they delight beſt in a poor Soil, and want very little Culture: therefore the beſt Method is to furniſh yourſelf with Roots from their natural Places of Growth; for their Seeds ſeldom ſucceed, if ſown: theſe ſhould be taken up with as much Earth about their Roots as poſſible; then plant them in ſome cold ſhady Part of the Garden, but not under the Drip of Trees; where, when they are once well fixed, they will continue without any farther Care for ſeveral Years, and will annually produce large Quantities of beautiful Flowers: and with theſe Plants may ſuch Parts of a Garden, where few other Things will thrive, be ſupplied to great Advantage: ſo that, did we but conſider well what Plants delight in moiſt and ſtrong Soils, and a ſhady Situation, and what require a dry light Soil, and a ſunny Expoſure, we need never be at a Loſs for Plants to embelliſh a Garden, be the Soil or Situation what it will: and it is for want of rightly conſidering how to adapt the proper Plants to each Soil and Situation, that we often ſee the Natives of a low Valley planted upon a dry barren Soil, and thoſe of dry ſandy Hills on a ſtrong rich Soil; in both which Caſes they ſtarve, and come to nothing.

The third Sort is ſeldom planted in Gardens, except where the Owners are curious in Collections of Plants; but yet it well deſerves a Place amongſt the former, in a cool ſhady Border, where it will thrive very well.

The fourth Sort is the moſt common in the Gardens, and was formerly

merly in greater Requeſt than at preſent. it having been in great Uſe for bordering of Flower-beds; but as it increaſes very faſt, it is apt to ſpread too far, and ſometimes decays in Patches, which renders it very unſightly: beſides, it muſt be tranſplanted at leaſt once a Year, otherwiſe it cannot be kept in any tolerable Order: however, a few Plants of this Kind may be preſerved as proper Furniture for ſhady Borders; but it will grow upon a drier Soil than any of the former Sorts.

The five next-mentioned Sorts grow on the *Alps* and *Apennines* in Plenty, from whence they have been tranſplanted into ſome curious Gardens by Lovers of Variety: they are all extreme hardy; wherefore they ſhould be planted in ſhady moiſt Places, and a poor Soil, where they will thrive much better than in an open Situation. They are propagated by Off-ſets, which they ſend forth in great Plenty: the beſt Seaſon for this Work is in *October*, that the Plants may be well rooted before Spring, otherwiſe they will not flower ſo ſtrong the following Summer. Some of theſe Plants were formerly planted for Edgings on the Sides of Borders in the Flower-garden; but they are by no means fit for this Purpoſe; therefore appear more beautiful when planted in Patches on ſhady moiſt Borders, where few other Plants will thrive: in ſuch Places theſe Plants will make a pretty Variety. They flower in *May*, and ſome of them will produce good Seeds in Autumn; but as they increaſe ſo faſt by Off-ſets, few Perſons regard their Seeds.

The other three Sorts were diſcovered by Dr. *Tournefort* in the *Levant*, who ſent them to the Royal Garden at *Paris*. Theſe are not quite ſo hardy as the former Sorts, but will endure the Cold of our ordinary Winters very well in the full Ground, being never deſtroyed but by extreme hard Froſt. Theſe may be propagated by Off-ſets, in the ſame manner as the former Sorts, and ſhould have a ſhady Situation.

GILLIFLOWER, or JULY-FLOWER. *Vide* Caryophyllus.

GILLIFLOWER, or STOCK-GILLIFLOWER. *Vide* Leucoium.

GILLIFLOWER, the Queen's or Dame's Violet. *Vide* Heſperis.

GINGER. *Vide* Zinziber.

GINGIDIUM. *Vide* Viſnaga.

GLADIOLUS, Cornflag.

The *Characters* are;

It hath a fleſhy double tuberoſe Root: the Leaves are like thoſe of the Flower-de-luce: the Flower conſiſts of one Leaf, and is ſhaped like a Lily, ſpreading open at the Top into two Lips; the upper one being imbricated, and the under one divided into five Segments: the Ovary becomes an oblong Fruit divided into three Cells, which are fill'd with roundiſh Seeds wrapt up in a Cover.

The *Species* are;

1. GLADIOLUS *utrinque floridus.* *C. B. P.* Cornflag with Flowers on both Sides the Stalks.

2. GLADIOLUS *carnei coloris.* *Swert. Flor.* Fleſh-colour'd Cornflag.

3. GLADIOLUS *floribus uno verſu diſpoſitis, major, floris colore purpureo-rubente.* *C. B. P.* Great Cornflag, with rediſh-purple Flowers rang'd on one Side the Stalk.

4. GLADIOLUS *major Byzantinus.* *C. B. P.* Great Cornflag of *Conſtantinople.*

5. GLADIOLUS *utrinque floridus, floribus albis. H. R. Monſ.* Cornflag with white Flowers ranged on each Side the Stalk.

6. Gladiolus *maximus Indicus. C. B. P.* The largeſt *Indian* Cornflag.

7. Gladiolus *floribus uno verſu diſpoſitis, major & procerior, flore candicante. C. B. P.* Greater and taller Cornflag, with whitiſh Flowers rang'd all on one Side.

8. Gladiolus *floribus uno verſu diſpoſitis, minor & humilior. C. B. P.* Smaller and lower Cornflag, with Flowers ranged on one Side.

9. Gladiolus *minor, floribus uno verſu diſpoſitis incarnatis. H. L.* Smaller Cornflag, with fleſh colour'd Flowers ranged on one Side.

10. Gladiolus *utrinque floridus, flore rubro. C. B. P.* Cornflag with red Flowers on both Sides.

11. Gladiolus *floribus uno verſu diſpoſitis, minor. C. B. P.* Smaller Cornflag, with Flowers ranged on one Side.

All theſe Sorts of Cornflag are propagated by their tuberoſe Roots, which the firſt, ſecond, and fifth Sorts produce in great Plenty; ſo that in a few Years, if they are ſuffered to remain unremoved, they will ſpread very far, and are hardly to be intirely rooted out, when they have once gotten Poſſeſſion of the Ground. Theſe Roots are in Shape very like thoſe of the large yellow Spring Crocus; but are ſomewhat bigger, yellower within, and have a rougher Outer-coat or Covering. The ſmall Off-ſets of theſe Roots will produce Flowers the ſecond Year; therefore when the old Roots are tranſplanted, the Off ſets ſhould be taken off from them, and planted into a Nurſery-bed for one Year, by which time they will be fit to tranſplant into the Borders of the Pleaſure-garden. Theſe Roots may be taken up in *July*, when their Leaves decay, and may be kept out of the Ground until *October*; at which time they ſhould be planted into the Borders of the Pleaſure-garden, intermixing them amongſt other bulbous rooted Plants: but if you plant them in large Borders in Wilderneſs-work, where they will thrive and flower very well, they need not be tranſplanted oftener than every other Year, or once in three Years; whereas in Borders of a Pleaſure-garden, if they were ſuffered to remain ſo long, they would over run the Ground, and be very troubleſome.

The third and fourth Sorts are the moſt valuable, producing taller Stalks, and fairer Flowers: nor are theſe ſo apt to increaſe; which renders them fitter for the Borders of a Flower-garden; ſo that ſince theſe have been introduced, and become common, the other Sorts have been rejected, unleſs in ſome old Gardens, or for large Wilderneſs-quarters, where they will grow better than the two laſt-mentioned.

Theſe Plants may alſo be propagated by Seeds, which ſhould be ſown in Pots or Tubs of freſh light Earth ſoon after they are ripe: theſe Tubs ſhould be placed where they may enjoy the morning Sun until Eleven o'Clock, in which Poſition they ſhould remain until *October*; at which time they muſt be removed where they may have the full Sun during the Winter-ſeaſon, and the *March* following the young Plants will begin to appear; when the Boxes or Pots ſhould have a little fine Earth ſifted over the Surface of the Ground, and be removed again where they may have only the morning Sun; obſerving, during the time of their Growth, to refreſh them with Water in dry Weather, as alſo to keep them clear from Weeds.

The *Michaelmas* following, if the Plants are very thick in the Pots or

Boxes, you ſhould prepare a Bed or two of freſh light Earth, in proportion to the Quantity of your young Plants; and after levelling the Surface very even, you ſhould ſpread the Earth of the Pots, in which the Roots are contained, as equal as poſſible upon the Beds (for the Roots at this time will be too ſmall to be eaſily taken up), covering the Bed about half an Inch thick with light ſifted Earth; and the Spring following, when the Plants begin to come up, you muſt ſtir the Ground upon the Surface to looſen it, and carefully clear the Beds from Weeds. In theſe Beds they may remain (obſerving in Autumn to ſift ſome freſh Earth over the Surface) until the fourth Year, by which time they will begin to ſhew their Flowers: therefore you may now obſerve to mark out all the beſt Kinds as they blow, which may the ſucceeding Year be tranſplanted into the Pleaſure-garden; but the poorer Kinds ſhould be thrown out as not worth preſerving: for the good Sorts will ſoon multiply, and furniſh you with a ſufficient Stock from Off-ſets.

The *Indian* Cornflag is tender, and muſt be preſerved in a warm Green-houſe, or a moderate Stove, during the Winter-ſeaſon. Theſe Roots ſhould be planted in Pots filled with a light ſandy Soil. The beſt time to tranſplant them is from the Month of *May*, at which time their green Leaves decay till *September*, that they begin to ſhoot again; and in *October* the Pots ſhould be removed into the Green-houſe: and during their Seaſon of Growth, which is chiefly in Winter, they muſt be frequently watered; but you muſt not give them Water in large Quantities: during the Summer-ſeaſon, if they are ſuffered to remain in the Pots, they ſhould have little Moiſture, but be only removed to a ſhady Place; for much Wet, at the time their Roots are inactive, is apt to rot them.

This Plant but rarely flowers with us; but when it doth, it makes a beautiful Appearance in the Green-houſe, eſpecially coming in *January*, when few other Flowers appear, which renders it worthy of a Place in every curious Garden.

GLASTENBURY-THORN. *Vide* Meſpilus.

GLAUCIUM, The Horned Poppy.

The *Characters* are;

The Cup of the Flower conſiſts of two Leaves: the Flower hath five Leaves, which are placed orbicularly, and expand in form of a Roſe, or a Poppy, but ſoon fall away: the Ovary ariſes from the Bottom of the little Placenta, *and is divided into two Parts at the Extremity: this becomes a long taper Pod, which is bivalve, having an intermediate Partition, to which are faſtened many roundiſh Seeds.*

The *Species* are;

1. GLAUCIUM *flore luteo. Tourn.* Yellow Horned Poppy.

2. GLAUCIUM *flore violaceo. Tourn.* Blue-flower'd Horned Poppy.

3. GLAUCIUM *hirſutum, flore phœniceo. Tourn.* Hairy Horned Poppy, with a deep-ſcarlet Flower.

4. GLAUCIUM *glabrum, flore phœniceo. Tourn.* Smooth Horned Poppy, with a deep-ſcarlet Flower.

5. GLAUCIUM *Orientale, flore magno rubro. Tourn. Cor. Eaſtern* Horned Poppy, with a large red Flower.

There are ſome other Varieties of this Plant, which occur in Botanic Authors; but theſe here mentioned are all the Sorts I have yet ſeen in the *Engliſh* Gardens. The firſt Sort is found upon the Sea-coaſts in ſome Parts of *England*; but if ſown in a

Garden, will grow very well: this is a perennial Plant, the Roots abideing, if in a poor dry Soil, two or three Years; but when planted in a moiſt or very rich Soil, it ſeldom continues longer than one Year, eſpecially if it flowers the firſt Summer.

The ſecond Sort Mr. *Ray* found growing amongſt Corn, betwixt *Swaſham* and *Burnwel* in *Cambridgeſhire*.

The third and fourth Sorts were brought from abroad: theſe are annual Plants, and either ſhould be ſown every Spring, or their Seeds ſuffered to ſcatter themſelves; for the Plants will ariſe in Autumn from the Seeds which fall; and if the Winter does not prove too ſharp, they will abide without any Care, and flower early the ſucceeding Spring. Theſe Plants, tho' there is not much Beauty in them, yet may be permitted to have a Place in large Gardens, for Variety, eſpecially as they require very little Culture. They delight moſt in a warm light Soil; but will grow in almoſt any Soil, if it be not over-dung'd.

The fifth Sort was found by Dr. *Tournefort* in the *Levant*, who ſent the Seeds to *Paris*. It is a biennial Plant, which may be propagated by Seeds, as the other Sorts; but ſhould have a light poor Soil, in which it will endure the Cold of the Winter much better than if ſown on a rich Ground.

GLAUX, Sea Milkwort.

The *Characters* are;

It hath a bell-ſhaped Flower, conſiſting of one Leaf, whoſe Brims are expanded, and cut into ſeveral Segments: from the Centre ariſes the Pointal, which afterward becomes a round Fruit or Huſk, opening from the Top downward, and filled with ſmall Seeds.

The *Species* are;

1. Glaux *maritima. C. B. P.* Sea Milkwort, or black Saltwort.

2. Glaux *maritima, flore albo. Tourn.* Sea Milkwort, with a white Flower.

3. Glaux *paluſtris, flore ſtriato clauſo, foliis portulacæ. Tourn.* Marſh Milkwort, with a ſtriped Flower, and Purſlane-leaves.

Theſe Plants grow wild in *England*, and are rarely preſerved in Gardens, unleſs for the ſake of Variety. They may be taken up in the Places of their Growth, and planted in Pots filled with poor gravelly Earth, and in Summer muſt be frequently watered: with this Management they may be preſerved, and will produce Flowers every Year.

GLECHOMA, Ground-ivy.

The *Characters* are;

It hath a labiated Flower, conſiſting of one Leaf, having a narrow compreſs'd Tube: the Upper-lip is erect and bifid: the Beard is large and open, and is divided into three; the middle Segment being large and bordered: there are four Stamina *under the Upper-lip, two of them being longer than the other: after the Flower is paſt, there are four naked Seeds, which are incloſed in the Empalement.*

This Genus of Plants is joined to the Calaminth by Dr. *Tournefort*; but by Dr. *Boerhaave* it is ſeparated, and made a diſtinct Genus, by the Title of Chamæclema; which being a compound Name, Dr. *Linnæus* has altered it to this of Glechoma, which is a Name in Dioſcorides; and he has added to it one Species of *Marrubiaſtrum*: the old Name of this Genus was *Hedera terreſtris*.

The *Species* are;

1. Glechoma *foliis reniformibus crenatis. Lin. Hort. Cliff.* Ground-

ivy, Gill-go-by-ground, Ale-hoof, or Tun-hoof.

2. Glechoma *foliis cordato-oblongis crenatis. Lin. Hort. Cliff.* Stinking marſh baſtard Horehound.

The Ground-ivy is very common under Hedges, and upon the Sides of Banks, in almoſt every Part of *England*; ſo is rarely cultivated in Gardens; but as it is uſed in Medicine, I thought proper to mention it here; and whoever hath an Inclination to cultivate this Plant, need only take up ſome Roots from the Places of its Growth, and plant them in a ſhady moiſt Place; where they will thrive, and ſend out Roots from the trailing Branches at every Joint, which will ſoon overſpread the Ground. There are two or three Varieties of this Plant mentioned by ſome Botanic Writers, which I believe to be only accidental Variations; for, on their being tranſplanted into the Garden, they ſoon altered to the common Sort.

The ſecond Sort grows wild in moiſt Places in *Holland*, and other Parts of *Europe*; but as it is never cultivated in Gardens, I ſhall paſs it over.

GLOBULARIA.

The *Characters* are;

It hath a floſculous Flower, conſiſting of many Florets, which are divided into ſeveral Segments, and have one Lip: theſe are contained in a proper Empalement, out of the Bottom of which ariſes the Pointal, fixed like a Nail to the lower Part of the Floret, and becoming a Seed, hidden in the Capſule, which before was the Empalement of the Floret: on that Capſule ſit the Placenta's, *which occupy the middle Part of the common Empalement.*

The *Species* are;

1. Globularia *vulgaris. Tourn.* Common Globularia.

2. Globularia *Pyrenaica, folio oblongo, caule nudo. Tourn. Pyrenean* Globularia, with an oblong Leaf, and naked Stalk.

3. Globularia *montana humillima repens. Tourn.* The loweſt creeping mountain Globularia.

4. Globularia *fruticoſa, myrti folio tridentato. Tourn.* Shrubby Globularia, with a trifid Myrtle-leaf.

5. Globularia *Africana fruteſcens, thymelææ folio lanuginoſo. Tourn.* Shrubby *African* Globularia, with a woolly Spurge-laurel-leaf.

6. Globularia *ſpinoſa. Tourn.* Prickly Globularia.

7. Globularia *Alpina minima, origani folio. Tourn.* The ſmalleſt *Alpine* Globularia, with a Wild-marjoram-leaf.

8. Globularia *Orientalis, floribus per caulem ſparſis. Tourn. Cor. Eaſtern* Globularia, with Flowers ſcattered along the Stalks.

9. Globularia *Orientalis, flore ampliſſimo. Tourn. Cor. Eaſtern* Globularia, with a very large Flower.

The firſt of theſe Plants grows plentifully about *Montpelier*, as alſo at the Foot of the Mountains *Jura* and *Saleva*, and in many other Parts of *Italy*, and in *Germany*. This Plant hath Leaves very like thoſe of the Daiſy, but they are thicker and ſmoother; the Flowers grow on Footſtalks, which are about ſix Inches high, and are of a globular Form.

The ſecond Sort grows plentifully in the Woods, and on the *Pyrenean* Mountains: this is much larger than the former, and the Footſtalk is quite naked; the Leaves are narrower, and much longer.

The third Sort is a very low Plant, whoſe Branches trail on the Ground, and ſtrike Roots out from their Joints, whereby it propagates itſelf very faſt. The Flowers grow on ſhort Footſtalks, and are of a blue Colour.

The firſt and ſecond Sorts may be propagated by parting their Roots, after the manner of Daiſies; but the third Sort is eaſily propagated from the trailing Branches, which take Root. The beſt Seaſon for parting and tranſplanting of theſe Plants is in *September*, that they may take new Root before the froſty Weather comes on. They ſhould be planted in Pots filled with freſh Earth, and placed in a ſhady Situation until they have taken Root. In the Summer-ſeaſon they ſhould be placed where they may have only the morning Sun; and in dry Weather ſhould be frequently refreſhed with Water. With this Management they will increaſe, and produce their Flowers every Year; but they rarely perfect their Seeds in this Country.

The fourth Sort grows about *Montpelier* in *France*; and in *Valentia*, and ſeveral other Parts of *Spain*. This has an hard woody Stem, and riſes to about two Feet high; having many woody Branches, beſet with Leaves like thoſe of the Myrtle-tree. On the Top of the Branches the Flowers are produced, which are of a blue Colour, and globe-ſhaped. This Plant may be propagated by Cuttings, which ſhould be cut off in *April*, juſt before they begin to make new Shoots. Theſe Cuttings ſhould be planted into Pots filled with freſh light Earth, and then placed into a very moderate Hot-bed; obſerving to water and ſhade them until they have taken Root; when they may be taken out of the Bed, and inured to bear the open Air by degrees. In Summer theſe Plants may be expoſed with other hardy Exotic Plants; and in Winter they ſhould be placed under an Hot-bed frame, where they may enjoy the free Air in mild Weather; but ſhould be ſcreened from hard Froſt, which will deſtroy them, if they are expoſed thereto; tho' in mild Winters they will live in the open Air. This Plant never produces good Seeds in this Country.

The fifth Sort grows in the Country about the *Cape of Good Hope*: this is a Shrub which riſes to the Height of ſeven or eight Feet, and divides into many Branches, which are cloſely beſet with thick ſtiff Leaves, much like thoſe of the Cneorum Matthioli: at the Diviſion of the Branches, the Flowers are produced, which are round, woolly, and of a ſilver Colour; and at firſt have the Appearance of the Katkin of the Mountain Oſier. This Shrub may be propagated by Cuttings; which ſhould be planted in *April*, juſt as the Plant begins to ſhoot, in Pots filled with freſh light Earth, and plunged into a very moderate Hot-bed of Tanners Bark; obſerving to water and ſhade them until they have taken Root; after which time you muſt inure them by degrees to bear the open Air; then they muſt be taken out of the Hot-bed, and may be placed amongſt other Exotics in a well-ſheltered Situation; obſerving to water them in dry Weather: in this Place they may remain till *October*, when they ſhould be removed into the Green-houſe, and placed where they may have as much free Air as poſſible in mild Weather: for this Plant only requires to be ſcreened from Froſt, being tolerably hardy: with this Management the Plants will thrive well, and in a few Years produce Flowers.

The ſixth Sort was found in the Mountains of *Granada*, by D. *Albinus*, *linus*. This Plant is of low Growth, and may be propagated as the firſt; as may alſo the ſeventh Sort, which is the leaſt of all the Sorts, and the moſt hardy; therefore ſhould have a ſhady Situation in Summer; but in Winter it will be proper to ſhelter them from ſevere Froſt.

The eighth and ninth Sorts were found by Dr. *Tournefort* in the *Levant:* theſe are ſomewhat tender, and ſhould be ſheltered from the Froſt in Winter; but in Summer they may be expoſed with other hardy Exotic Plants, and require to be frequently watered in dry Weather. Theſe may be propagated by Seeds, or by planting the Cuttings, as was directed for the former Sorts.

GLORIOSA, The Superb-lily.

The *Characters* are;

The Flower is naked, having ſix long waved Petals, which are reflex'd to the Bottom: in the Centre is placed the Pointal, which is attended by ſix Stamina, *which are ſhorter than the Petals: the Pointal afterward becomes an oval Pod, divided into three Cells, which are filled with roundiſh Seeds.*

We have but one *Species* of this Plant; *viz.*

GLORIOSA. *Lin. Hort. Cliff.* The Superb-lily.

This was by former Botaniſts titled, *Methonica Malabarorum*; but as that Name alluded to the Place of its Growth, Dr. *Linnæus* has rejected it, and given this of *Glorioſa* to it, from the ſplendid Appearance which the Flowers of this Plant make.

This is a Native of *Malabar*, from whence the Roots have been brought to *Europe*, and are preſerved in ſeveral curious Gardens. The Roots of this Plant are long and fleſhy, being in Size about the Thickneſs of a little Finger. Theſe Roots creep in the Ground, and the Plant is thereby propagated; but it is too tender to live in the open Air in *England*. In *Holland* the Gardeners take the Roots out of the Ground in Autumn, and preſerve them in dry Sand in their Stoves all the Winter; and in the Spring of the Year they plant them in Pots fill'd with light Earth, and plunge them into an Hot-bed of Tanners Bark, where they remain conſtantly during all the Summer; obſerving to give free Air to the Plants in mild Weather, and to water them as often as they find the Earth dry: with this Management they produce their Flowers in *July* and *Auguſt*, and their Stems decay to the Root in *October*, when they take up the Roots.

The Stems of this Plant uſually grow about two Feet high, having Tendrils or Claſpers at the End of the Leaves, by which they faſten themſelves to any thing near them; therefore ſhould be ſupported by Sticks, to prevent their trailing on the neighbouring Plants. The Flowers are produced at the Extremity of the Shoots, from the Wings of the Leaves, which are of a beautiful Flame-colour. There is ſeldom more than one Flower upon a Footſtalk; but as there are many Footſtalks on each Plant, they continue to flower after each other. This Plant is very poiſonous: therefore Care ſhould be taken not to let either the Leaves or Roots be in the Way of ignorant Perſons, leſt they ſhould injure themſelves unawares.

GLYCINE, Knobbed-rooted Liquorice-vetch.

The *Characters* are;

It hath a papilionaceous Flower, the Standard being heart-ſhaped; the Wings are oblong, and oval at the Top: the Keel is very narrow, falcated, and reflexed at the Point, *where it meets the Standard, and is there broader: there are nine* Stamina *collected in a Body, and one ſingle, which are ſhut up in the Standard, with a ſpiral Pointal, which afterward becomes a cylindrical Pod, opening both Ways, and filled with kidney-ſhaped Seeds.*

The *Species* are;

1. Glycine *radice tuberoſa. Lin. Hort. Cliff.* Apios, or knobbed-rooted Liquorice-vetch.

2. Glycine *caule perenni. Lin. Hort. Cliff.* The *Carolina* Kidney-bean-tree, *vulgo.*

The firſt Sort was brought from *Virginia,* where it grows plentifully in the Woods: this has large knobbed Roots, which remain ſeveral Years in the Ground, and annually ſhoot up ſeveral twining Stalks, which riſe to the Height of ten or twelve Feet, twiſting round whatever ſtands near them: theſe are garniſhed with winged Leaves, having many *Alæ,* and ending with an odd Lobe. The Flowers are produced in Spikes from the Wings of the Leaves, toward the Upper-part of the Stalks, which are of a dark Fleſh-colour. Theſe are rarely ſucceeded by Pods in *England*; or if they are, the Seeds are never perfected, the Seaſons being too cool for them.

The Roots of this Plant will live thro' the Winter in the open Air, if they are planted in a light Soil, and a warm Situation; and will thrive much better, if they are planted in a warm Border, than when they are kept in Pots: and if in very ſevere Winters the Roots are well covered, either with rotten Tan, or Peas-haulm, to keep out the Froſt, there will be no Danger of their decaying.

I have ſeen theſe Plants ſet round an Arbour, which they have covered in Summer; and when the Flowers were blown, they made a good Appearance; but it is pretty late in the Seaſon before they get up high enough to make a Shade.

The Seeds of this Sort are frequently brought from *America,* which may be ſown in the common Ground in the Spring, and the Plants will come up the ſame Year; but ſhould remain in the ſame Place until the next Spring: tho' they ſhould be covered in Winter; for the young Roots will be in more Danger of ſuffering by the Froſt, than when they have acquired more Strength. In the Beginning of *April* the Roots may be tranſplanted where they are to remain. Theſe alſo propagate by Off-ſets from the Root, which may be tranſplanted at the ſame time as the Seedling-plants.

This is ranged by Dr. *Tournefort* under the Genus of *Aſtragalus,* or Milk-vetch; and is titled, *Aſtragalus tuberoſus ſcandens, fraxini folio.*

The ſecond Sort was brought from *Carolina*; but has been ſince obſerved in *Virginia,* and ſome other Places in *North America.* This Sort has woody Stalks, which twiſt themſelves together, and alſo twine round any Trees that grow near, and will riſe to the Height of fifteen Feet, or more. The Leaves are winged, and in Shape ſomewhat like the Aſh-tree, but have a greater Number of *Pinnæ.* The Flowers are produced from the Wings of the Leaves, which are of a purple Colour: theſe are ſucceeded by long cylindrical Pods, ſhaped like thoſe of the ſcarlet Kidney-bean, containing ſeveral kidney-ſhaped Seeds; but theſe are never perfected in *England.*

This climbing Shrub is propagated in ſeveral Nurſeries near *London,* where it is known by the Name of *Carolina* Kidney-bean-tree. It is increaſed by laying down the young Branches in *October*; which will be rooted well by that time Twelvemonth, eſpecially if they are duly watered in dry Weather, and may then be tranſplanted either into a Nurſery for a Year to get Strength, or to the Place where they are to remain for good; which ſhould be in a warm light Soil, and a ſheltered Situation, where they will endure the Cold of our ordinary Winters very well; and if their Roots are covered with Straw, Fern, Peas-haulm, or any other light Covering, there will be no Danger of their being deſtroyed by the Froſt.

GLYCYRRHIZA, Liquorice.

The *Characters* are;

It hath a papilionaceous Flower: the Pointal, which ariſes from the Empalement, becomes a ſhort Pod, containing ſeveral kidney-ſhaped Seeds: the Leaves are placed by Pairs joined to the Mid-rib, and are terminated by an odd Lobe.

The *Species* are;

1. Glycyrrhiza *filiquoſa, vel Germanica. C. B. P.* Common Liquorice.

2. Glycyrrhiza *capite echinato. C. B. P.* Rough-podded Liquorice.

3. Glycyrrhiza *Orientalis, filiquis hirſutiſſimis. Tourn. Cor.* Eaſtern Liquorice, with hairy Pods.

The firſt Sort is that which is commonly cultivated in *England* for Medicine: the other two Kinds are preſerved in curious Botanic Gardens for Variety; but their Roots are not ſo full of Juice as the firſt, nor is the Juice ſo ſweet; tho' the ſecond Sort ſeems to be that which *Dioſcorides* has deſcribed and recommended; but I ſuppoſe the Goodneſs of the firſt has occaſioned its being ſo generally cultivated in *Europe*.

The two Sorts laſt-mentioned perfect their Seeds in *England*, by which they may be propagated; whereas the common Sorts ſeldom produce any in this Country. They may alſo be propagated by Roots, as the common Sort.

This Plant delights in a rich light ſandy Soil, which ſhould be three Feet deep at leaſt; for the greateſt Advantage conſiſts in the Length of the Roots: the greateſt Quantity of Liquorice which is propagated in *England* is about *Pontefract* in *Yorkſhire*, and *Godalmin* in *Surry*; tho' of late Years there hath been a great deal cultivated in the Gardens near *London*: the Ground in which you intend to plant Liquorice ſhould be well dug and dunged the Year before you plant it, that the Dung may be perfectly rotted, and mixed with the Earth, otherwiſe it will be apt to ſtop the Roots from running down; and before you plant it, the Ground ſhould be dug three Spades deep, and laid very light: when your Ground is thus well prepared, you ſhould furniſh yourſelf with freſh Plants taken from the Sides or Heads of the old Roots; obſerving that they have a good Bud or Eye, otherwiſe they are ſubject to miſcarry: theſe Plants ſhould be about ten Inches long, and perfectly ſound.

The beſt Seaſon for planting them is towards the End of *February*, or the Beginning of *March*, which muſt be done in the following manner; *viz.* Firſt ſtrain a Line croſs the Ground in which you would plant them; then with a long Dibble made on purpoſe, put in the Shoot, ſo that the whole Plant may be ſet ſtrait into the Ground, with the

Head about an Inch under the Surface in a ſtrait Line, about a Foot aſunder, or more, in Rows, and two Feet Diſtance Row from Row; and after having finiſhed the whole Spot of Ground, you may ſow a thin Crop of Onions, which, being Plants that don't root deep into the Ground, nor ſpread much above-ground, will do the Liquorice no Damage the firſt Year; for the Liquorice will not ſhoot very high the firſt Seaſon; and the Hoeing of the Onions will alſo keep the Ground clear from Weeds: but in doing of this you muſt be careful not to cut off the top Shoots of the Liquorice-plants, as they appear above-ground, which would greatly injure them; and alſo obſerve to cut up all the Onions which grow near the Heads of the Liquorice; and after your Onions are pulled up, you ſhould carefully hoe and clean the Ground from Weeds: and in *October*, when the Shoots of the Liquorice are decayed, you ſhould ſpread a little very rotten Dung upon the Surface of the Ground, which will prevent the Weeds from growing during the Winter; and the Rain will waſh the Virtue of the Dung into the Ground, which will greatly improve the Plants.

In the Beginning of *March* following you ſhould ſlightly fork the Ground between the Rows of Liquorice, burying the remaining Part of the Dung: but in doing of this, you ſhould be very careful not to injure the Roots. This ſtirring of the Ground will not only preſerve it clean from Weeds a long time, but alſo greatly ſtrengthen the Plants.

The Diſtance which I have allowed for planting theſe Plants, will, I doubt not, by ſome, be thought too great: but in Anſwer to that, I would only obſerve, that as the Largeneſs of the Roots is the chief Advantage to the Planter, ſo the only Method to obtain this, is by giving them room: and beſides, this will give a greater Liberty to ſtir and dreſs the Ground, which is of great Service to Liquorice; and if the Plantation deſign'd were to be of an extraordinary Bigneſs, I would adviſe the Rows to be made at leaſt three Feet diſtant, whereby it will be eaſy to ſtir the Ground with a Breaſt-plough, which will greatly leſſen the Expence of Labour.

Theſe Plants ſhould remain three Years from the time of planting, when they will be fit to take up for Uſe; which ſhould not be done until the Stems are perfectly decayed; for when it is taken up too ſoon, it is ſubject to ſhrink greatly, and loſe of its Weight.

The Ground near *London*, being rich, increaſes the Bulk of the Root very faſt; but when it is taken up, it appears of a very dark Colour, and not near ſo ſightly as that which grows upon a ſandy Soil in an open Country.

GNAPHALIUM, Cudweed.

The *Characters* are;

It hath downy Leaves: the Cup of the Flower is ſcaly, neither ſhining nor ſpecious: the Flowers are divided or cut in form of a Star.

The *Species* are;

1. GNAPHALIUM *Anglicum. Ger.* Long-leav'd upright Cudweed.

2. GNAPHALIUM *minus, ſeu herba impia. Park.* Common Cudweed.

3. GNAPHALIUM *maritimum. C. B. P.* Sea Cudweed, or Cotton-weed.

The two firſt Sorts are found wild in divers Parts of *England*, upon moiſt ſtony Heaths, eſpecially in ſuch Places where the Water ſtood during the Winter. The ſecond Sort is placed in the Catalogue of Simples annexed to the *College Diſpenſatory*, but is not often uſed in Medicine: theſe Plants are ſeldom propagated in Gardens, except for the ſake of Variety; for they have no great Beauty, nor are of much Uſe. There are alſo many more of this Kind, ſome of which grow wild in *England:* but as they are never cultivated, I ſhall paſs them over without naming, and proceed to the third Sort, which is often preſerved in curious Gardens for the Variety of its fine ſilver-colour'd Leaves. This Plant is found upon the Sea-coaſts of *Cornwall*, and ſome other Parts of *England;* but yet will rarely abide the Cold of our Winters near *London*, if planted in the open Air; tho', if it be preſerved in a common Frame from the Severity of Froſt, it will thrive very well; this is propagated by planting its Cuttings in any of the Summer-months, obſerving to water and ſhade them from the Violence of the Sun in the Middle of the Day; and in about two Months they will be rooted enough to tranſplant; at which time you ſhould provide a Parcel of ſmall Pots, which ſhould be filled with light ſandy Earth, planting your young Plants therein, ſhading them again until they have taken new Roots; after which they may be expoſed until the End of *October*, when you ſhould remove the Pots into Shelter for the Winter-ſeaſon. But although I have adviſed the planting of theſe Plants into Pots, yet, if you have a Stock of them, you may plant ſome of them abroad under a warm Wall, where they will ſtand very well in mild Winters; but in very ſharp Froſts they are generally deſtroyed. They muſt be frequently watered in dry Weather, otherwiſe they will not flower.

GNAPHALODES.

The *Characters* are;

It is a Plant with a floſculous Flower, conſiſting of ſeveral barren Florets: the Embryoes, which conſtituted the Empalement of the Flower, become a creſted Fruit, pregnant with a Seed for the moſt part oblong.

We have but one *Species* of this Plant at preſent in *England*; which is,

GNAPHALODES *Luſitanica. Tourn.* *Portugal* Gnaphalodes.

This is a low annual Plant, which ſeldom riſes above four Inches high, but divides into ſeveral trailing Branches, which are beſet with ſmall ſilver-colour'd Leaves, which have a great Reſemblance to thoſe of Cudweed; tho' the Flowers are ſo ſmall as not to be conſpicuous, unleſs they are magnified by a Glaſs.

This Plant is ſeldom preſerved in Gardens, unleſs it be for the ſake of Variety; for there is little Beauty in it. The Seeds of this Plant may be ſown the Beginning of *April*, on a Bed of light Earth, in an open Situation; and when the Plants are come up, they ſhould be kept clean from Weeds, and in very dry Weather they ſhould be ſometimes refreſhed with Water: with this Management the Plants will flower in *July*, and in *Auguſt* the Seeds will ripen, when the Plants will ſoon after decay.

GOOSBERRY. *Vide* Groſſularia.

GORZ. *Vide* Ulex.

GOSSYPIUM.

The *Characters* are;

The Flower hath a double Empalement, the outer being large, conſiſting of one Leaf, and divided at the Brim into three Parts; the inner conſiſts of one Leaf, which is cut into five Parts, and opens like a Cup: the Flower conſiſts of five Leaves, which are joined *together at the Bottom, are heart-ſhaped, and ſpread open, in the ſame manner as the Mallow: in the Centre of the Flower is ſituated a Column covered with* Stamina *at the Top, ſurrounding the Pointal, which afterward turns to a roundiſh Pod, opening in four Cells, containing many oval Seeds wrapp'd up in the Cotton.*

The *Species* are;

1. Gossypium *foliis palmatis quinquepartitis.* The common annual Cotton.

2. Gossypium *foliis palmatis, ſeptem-angularis, ramis patulis hirſutis.* The green ſeeded *Indian* Cotton.

3. Gossypium *caule erecto arboreo.* The *American* Tree Cotton.

The firſt Sort is the common *Levant* Cotton, which is cultivated in ſeveral Iſlands of the *Archipelago*, as alſo in *Malta*, *Sicily*, and the Kingdom of *Naples*: it is ſown in tilled Ground in the Spring of the Year; and is ripe in about four Months after, when it is cut down in Harveſt as Corn is in *England*; and is ſown every Year, the Plants always periſhing ſoon after the Seeds are ripe: this Plant grows about two Feet high, ſending forth ſome lateral Branches toward the Upper-part, which produce Flowers and Fruit: the Pods of this Sort of Cotton are not bigger than a Nutmeg, and contain but little Cotton.

The ſecond Sort is a Native of the *Eaſt* and *Weſt-Indies*; from whence the Seeds have been brought to *Europe*: this is alſo an annual Plant, which periſhes ſoon after the Seeds are ripe. It riſes to the Height of three Feet or more, and ſends out many lateral Branches, which extend to a great Diſtance, where they are allowed room to grow: ſome of theſe Branches will produce four or five Pods of Cotton upon each; ſo that from a ſingle Plant thirty or more Pods may be produced; and each of theſe are as large as middling Apples; ſo there will be a much greater Produce from this than from the other Sort; and the Staple is much finer: therefore it is well worth the Attention of the Inhabitants of the *Britiſh* Colonies in *America*, to cultivate and improve this Sort; ſince it will ſucceed in *Carolina*, and ſome other Parts of the Continent of *America*, full as well as in the Iſlands: and as the preſent Uſe of this Commodity is ſo great, as to advance the Price to double of what it was ſold for ſome Years ſince; ſo there are few things which will produce more Profit to the Planter, than this of the fine Sort of Cotton.

This Sort may be eaſily diſtinguiſhed by the Seeds, which are green; whereas thoſe of all the other Sorts are black, as alſo by the Size of the Pods, which are much larger than thoſe of the other; the Cotton is alſo much finer: the Flowers of this Sort are large, of a pale Sulphur-colour, inclining to white; and at the Bottom of each Petal there is a large purple Spot; ſo that when they are open, they make a fine Appearance.

The third Sort grows plentifully in moſt of the Iſlands in *America*, as alſo in *Egypt*, and many other warm Countries: this will grow to the Height of fifteen Feet or more, and becomes woody; the Plants continuing ſeveral Years: it is propagated in ſeveral of the Iſlands in *America*, as alſo in *Egypt*; but the Cotton is not ſo valuable as that of the ſecond Sort, therefore not worth cultivateing, where the other can be obtained, which is already in Plenty in *South Carolina*; ſo may be eaſily procured from thence.

All theſe Sorts are very tender Plants; therefore will not thrive in the open Air in *England*; but they are frequently ſown in curious Gardens for Variety: the two firſt Sorts will produce ripe Seeds in *England*, if their Seeds are ſown early in the Spring, upon a good Hot-bed; and when the Plants are come up, they may be planted into ſeparate Pots, and plunged into an Hot-bed of Tanners Bark, to bring them forward; and when they are grown too tall to remain under the Frames, removed into the Tan-bed in the Stove, and ſhifted into larger Pots, when their Roots have filled the other: with this Management, I have had their Flowers appear in *July*; and toward the End of *September* the Seeds have been perfectly ripe, and the Pods as large as thoſe produced in the *Eaſt* and *Weſt-Indies*: but if the Plants are not brought forward early in the Spring, it will be late in the Summer before the Flowers will appear; and there will be no Hopes of the Pods coming to Perfection.

The Shrub Cotton will riſe from the Seeds very eaſily, if they are ſown upon a good Hot-bed; and when they are ſown early in the Spring, and brought forward in the ſame manner as hath been directed for the former Sorts, the Plants will grow to be five or ſix Feet high the ſame Summer: but it is difficult to preſerve the Plants thro' the Winter, unleſs they are hardened gradually in *Auguſt* during the Continuance of the warm Weather; for when they are forced on at that time, they will be ſo tender, as to render them incapable of reſiſting the leaſt Injury. The Plants of this Sort muſt be placed in the Bark-ſtove in Autumn, and kept in the firſt Claſs of Heat; otherwiſe they will not live through the Winter in *England*.

GRAFTING is the taking a Shoot from one Tree, and inſerting it into another; in ſuch a manner, as that both may unite cloſely, and become one Tree. This is called by the antient Writers in Huſbandry and Gardening, *Inciſion*, to diſtinguiſh it from Inoculating or Budding; which they call *inſerere Oculos*.

The Uſe of Grafting is to propagate any curious Sorts of Fruits, ſo as to be certain of the Kinds; which cannot be done by any other Method; for as all the good Fruits have been accidentally obtained from Seeds, the Seeds of theſe, when ſown, will many of them degenerate, and produce ſuch Fruit as are not worth cultivating; but when Shoots are taken from ſuch Trees as do produce good Fruit, theſe will never alter from their Kind, whatever be the Stock or Tree on which they are grafted; for though the Grafts receive the Nouriſhment from the Stocks, yet they are never altered by them, but continue to produce the ſame Kind of Fruit, as the Tree from which they were taken: the only Alteration is, that when the Stocks on which they are grafted do not grow ſo faſt, and afford a ſufficient Supply of Nouriſhment to the Grafts, they will not make near ſo great Progreſs, as they otherwiſe would do; nor will the Fruit they produce be ſo fair, and ſometimes not ſo well flavour'd.

Theſe Shoots are termed Cions or Graffs: in the Choice of theſe the following Directions ſhould be carefully obſerved. 1ſt, That they are Shoots of the former Year; for when they are older, they never ſucceed well. 2dly, Always to take them from healthy, fruitful Trees; for if the Trees are ſickly from whence they are taken, the Grafts very often partake ſo much of the Diſtemper, as rarely to get the better of it, at leaſt for ſome Years: and when they are taken from young luxuriant Trees, whoſe Veſſels are generally large, they will continue to produce luxuriant Shoots; and are ſeldom ſo fertile as thoſe which are taken from fruitful Trees, whoſe Shoots are more compact, and the Joints cloſer together; at leaſt it will be a much greater Number of Years before theſe luxuriant Grafts begin to produce Fruit, if they are managed with the greateſt Skill. 3dly, You ſhould prefer thoſe Grafts which are taken from the lateral or horizontal Branches, to thoſe from the ſtrong perpendicular Shoots, for the Reaſons before given.

Theſe Grafts or Cions ſhould be cut off from the Trees before their Buds begin to ſwell: which is generally three Weeks or a Month before the Seaſon for Grafting; therefore, when they are cut off, they ſhould be laid in the Ground with the Cut downwards, burying them half their Length, and covering their Tops with dry Litter, to prevent their drying: if a ſmall Joint of the former Year's Wood is cut off with the Cion, it will preſerve it the better; and when they are grafted, this may be cut off; for at the ſame time the Cions muſt be cut to a proper Length, before they are inſerted into the Stocks; but till then, the Shoots ſhould remain their full Length, as they were taken from the Tree, which will preſerve them better from ſhrinking: if theſe Cions are to be carried to a conſiderable Diſtance, it will be proper to put their cut Ends into a Lump of Clay, and to wrap them up in Moſs; which will preſerve them freſh for a Month, or longer: but theſe ſhould be cut off earlier from the Trees, than thoſe which are to be grafted near the Place where the Trees are growing.

Having given Directions for the Cions and Grafts, we next come to that of the Stocks, which is a Term applied to the Trees intended for grafting: theſe are either ſuch old Trees as are already growing in the Places where they are deſigned to remain, whoſe Fruit is intended to be changed; or young Trees, which have been raiſed in a Nurſery for a Supply to the Garden: in the former Caſe there is no other Choice, but that of the Branches; which ſhould be ſuch as are young, healthy, well ſituated, and as have a ſmooth Bark: if theſe Trees are growing againſt Walls or Eſpaliers, it will be proper to graft ſix, eight, or ten Branches, according to the Size of the Trees; by which Method they will be much ſooner furniſhed with Branches again, than when a leſs Number of Cions are put in: but in Standard-trees, four, or at moſt ſix Cions will be ſufficient.

In the Choice of young Stocks for Grafting, you ſhould always prefer ſuch as have been raiſed from the Seed, and that have been once or twice tranſplanted. Next to theſe, are thoſe Stocks which have been raiſed from Cuttings or Layers; but thoſe which are Suckers from Roots of other Trees, ſhould always be rejected; for theſe are never ſo well rooted as the others, and conſtantly put out a great Number of Suckers from their Roots, whereby the Borders and Walks of the Garden will be always peſtered with them during the Summer-ſeaſon; which is not only unſightly, but they alſo take off Part of the Nouriſhment from the Trees.

If theſe Stocks have been allowed a proper Diſtance in the Nurſery where they have grown, the Wood will be better ripened, and more compact, than thoſe which have grown cloſe, and have been thereby drawn up to a greater Height: the Wood of theſe will be ſoft, and their Veſſels large, ſo that the Cions grafted into them will ſhoot very ſtrong; but they will be leſs diſpoſed to produce Fruit than the other; and when Trees acquire an ill Habit at firſt, it will be very difficult to reclaim them afterward.

Having directed the Choice of Cions and Stocks, we come next to the Operation; in order to which you muſt be provided with the following Tools:

1. A neat ſmall Hand-ſaw, to cut off the Heads of large Stocks.

2. A good ſtrong Knife with a thick Back, to make Clefts in the Stocks.

3. A ſharp Penknife to cut the Grafts.

4. A Grafting Chiſſel, and a ſmall Mallet.

5. Baſs Strings, or woollen Yarn, to tie the Grafts with; and ſuch other Inſtruments and Materials as you ſhall find neceſſary, according to the manner of Grafting you are to perform.

6. A Quantity of Clay, which ſhould be prepared a Month before it is uſed, and kept turned and mixed, like Morter, every other Day; which is to be made after the following Manner:

Get a Quantity of ſtrong fat Loam, in proportion to the Quantity of Trees intended to be grafted; then take ſome new Stonehorſe Dung, and break it in amongſt the Loam; and if you cut a little Straw or Hay very ſmall, and mix amongſt it, the Loam will hold together the better; and if there be a Quantity of Salt added, it will prevent the Clay from dividing in dry Weather, theſe muſt be well ſtirred together, putting Water to them after the manner of making Morter: it ſhould be hollowed like a Diſh, and filled with Water, and kept every other Day ſtirr'd: but it ought to be remembred, that it ſhould not be expoſed to the Froſt, or drying Winds, and that the oftener it is ſtirr'd and wrought, the better.

Of late Years ſome Perſons have made uſe of another Compoſition for Grafting, which they have found to anſwer the Intention of keeping out the Air, better than the Clay before preſcribed. This is compoſed of Turpentine, Bees-wax, and Reſin, melted together, which, when of a proper Conſiſtence, may be put on the Stock round the Graft, in the ſame manner as the Clay is uſually applied; and tho' it be not above a quarter of an Inch thick, yet it will keep out the Air more effectually than the Clay; and as Cold will harden this, there is no Danger of its being hurt by Froſt, which is very apt to cauſe the Clay to cleave, and ſometimes fall off; and when the Heat of the Summer comes on, this Mixture will melt, and fall off without any Trouble. In uſing of this, there ſhould be a Tin or Copper-pot, with Conveniency under it to keep a very gentle Fire with Small-coal, otherwiſe the Cold will ſoon condenſe the Mixture; but you muſt be careful not to apply it too hot, leſt you injure the Graft. A Perſon who is a little accuſtom'd to this Compoſition, will apply it very faſt; and it is much eaſier for him than Clay, eſpecially if the Seaſon ſhould prove cold.

There are ſeveral Ways of Grafting; the principal of which are four:

1. Grafting in the Rind, called alſo Shoulder-grafting, which is only proper for large Trees: this is called Crown-grafting, becauſe the Grafts are ſet in form of a Circle or Crown; and is generally performed about the Latter-end of *March*, or the Beginning of *April*.

2 Cleft-grafting, which is alſo called Stock or Slit-grafting: this is proper for Trees or Stocks of a leſſer Size, from an Inch to two Inches or more Diameter: this Grafting is to be performed in the Months of *February* and *March*, and ſupplies the Failure of the Eſcutcheon-way, which is practiſed in *June*, *July*, and *Auguſt*.

3 Whip-grafting, which is alſo called Tongue-grafting: this is proper for ſmall Stocks of an Inch, half an Inch, or leſs, Diameter: this is the moſt effectual Way of any, and that which is moſt in Uſe.

4. Grafting by Approach, or Ablactation: this is to be performed when the Stock you would graft on, and the Tree from which you take your Graft, ſtand ſo near together, that they may be joined: this is to be performed in the Month of *April*, and is alſo called Inarching, and is chiefly uſed for Jaſmines, Oranges, and other tender Exotic Trees, which will not ſucceed by either of the other Methods of Grafting.

We next come to the manner of performing the ſeveral Ways of Grafting:

The firſt Method, which is term'd Rind or Shoulder-grafting, is ſeldom practiſed, but on large Trees, where either the Head, or the large Branches, are cut off horizontally, and two or four Cions put in, according to the Size of the Branch or Stem: in doing of this, the Cions are cut flat on one Side, with a Shoulder to reſt upon the Crown of the Stock; then the Rind of the Stock muſt be raiſed up, to admit the Cion between the Wood and the Bark of the Stock, which muſt be inſerted about two Inches; ſo as the Shoulder of the Cion may meet, and cloſely join the Crown of the Stock; and after the Number of Cions are inſerted, the whole Crown of the Stock ſhould be well clayed over, leaving two Eyes of the Cions uncovered therewith; which will be ſufficient for ſhooting; this Method of grafting was much more in Practice formerly than at preſent: the Diſcontinuance of it was occaſioned by the ill Succeſs it was attended with; for as theſe Cions were placed between the Rind of the Stock and the Wood, ſo they were frequently blown out by ſtrong Winds, after they had made large Shoots; which has ſometimes happened after five or ſix Years Growth; ſo that whenever this Method is practiſed, there ſhould be ſome Stakes faſtened to ſupport the Cions, until they have almoſt covered the Stock.

The next Method is termed Cleft or Stock-grafting: this is practiſed upon Stocks or Trees of a ſmaller Size; and may be uſed with Succeſs where the Rind of the Stock is not too thick; whereby the inner Bark of the Cion will be prevented joining to that of the Stock: this may be performed on Stocks or Branches, which are more than one Inch Diameter; in doing of this, the Head of the Stock or Branch muſt be cut off with a Slope, and a Slit made the contrary Way, in the Top of the Slope, deep enough to receive the Cion, which ſhould be cut ſloping like a Wedge, ſo as to fit the Slit made in the Stock, being careful to leave that Side of the Wedge, which is to be placed outward, much thicker than the other; and in putting the Cion into the Slit of the

Stock, there muſt be great Care taken to join the Rind of the Cion to that of the Stock; for if theſe do not unite, the Grafts will not ſucceed: when this Method of Grafting is uſed to Stocks which are not ſtrong, it will be proper to make a Ligature of Baſs, to prevent the Slit of the Stock from opening; then the Whole ſhould be clayed over, to prevent the Air from penetrating the Slit ſo as to deſtroy the Grafts; only leaving two Eyes of the Cions above the Clay for ſhooting.

The third Method is termed Whip or Tongue-grafting, which is the moſt commonly practiſed of any by the Nurſery-men near *London*, eſpecially for ſmall Stocks; becauſe the Cions much ſooner cover the Stocks in this Method, than in any other.

This is performed by cutting off the Head of the Stocks ſloping; then there muſt be a Notch made in the Slope toward the Upper-part downward, a little more than half an Inch deep, to receive the Cion; which muſt be cut with a Slope upward, and a Slit made in this Slope like a Tongue; which Tongue muſt be inſerted into the Slit made in the Slope of the Stock; and the Cion muſt be placed on one Side of the Stock, ſo as that the two Rinds of both Cion and Stock may be equal, and join together exactly; then there ſhould be a Ligature of Baſs to faſten the Cion, ſo as that it may not be eaſily diſplaced; and afterward clay it over, as in the former Methods.

The fourth Sort of Grafting is termed Inarching-grafting, by Approach or Ablactation. This is only to be performed when the Stocks, which are deſign'd to be grafted, and the Tree from which the Graft is to be taken, ſtand ſo near together, or may be brought ſo near each other, as that their Branches may be united together: this Method of Grafting is commonly practiſed on tender Exotic Plants, and ſome other Sorts which do not ſucceed in any of the other Methods, as was before obſerved.

In performing of this Operation, a Part of the Stock or Branch muſt be cut off about two Inches in Length, obſerving always to make choice of a ſmooth Part of the Stock; then a ſmall Notch ſhould be made in the Stock downward, in the ſame manner as hath been directed for Whip-grafting; then the Branch of the Tree deſigned to be inarched ſhould have a Part cut off in the like manner as the Stock, and a Slit made upward in this, ſo as to leave a Tongue; which Tongue ſhould be inſerted into the Slit of the Stock, obſerving to join their Rinds equally, that they may unite well together: then make a Ligature of Baſs, to keep them exactly in their Situation; and afterward clay this Part of the Stock over well, to keep out the Air: in this Method of Grafting, the Cion is not ſeparated from the Tree, until it is firmly united with the Stock; nor is the Head of the Stock or Branch, which is grafted, cut off till this time, and only half the Wood pared off with a Slope, about three Inches in Length; and the ſame of the Cion or Graft.

This Method of Grafting is not performed ſo early in the Seaſon, as thoſe of the other, it being done in the Month of *April*, when the Sap is flowing; at which time the Cion and Stock will join together, and unite much ſooner than at any other Seaſon.

The Walnut, Fig, and Mulberry, will take, by this Method of Grafting; but neither of theſe will ſucceed in any of the other Methods: there are alſo ſeveral Sorts of Evergreens, which may be propagated by this Method of Grafting: but all the Trees which are grafted in this Way are weaker, and never grow to the Size of thoſe which are grafted in the other Methods; therefore this is rarely practiſed, but on ſuch Sorts of Trees as will not take by the other Methods.

The next thing which is neceſſary to be known, by thoſe who would practiſe this Art, is, what Trees will take and thrive by being grafted upon each other: and here there have been no ſure Directions given by any of the Writers on this Subject; for there will be found great Miſtakes in all their Books, in relation to this Matter; but as it would ſwell this Article to too great Size, if all the Sorts of Trees were to be here enumerated, which will take upon each other by Grafting, I ſhall put down ſuch general Directions, as, if attended to, will be ſufficient to inſtruct Perſons, ſo as they may ſucceed.

All ſuch Trees as are of the ſame Genus, *i. e.* which agree in their Flower and Fruit, will take upon each other; for Inſtance, all the Nut-bearing Trees may be ſafely grafted on each other; as may all the Plum-bearing Trees, under which Head I reckon not only the ſeveral Sorts of Plums, but alſo the Almond, Peach, Nectarine, Apricock, *&c.* which agree exactly in their general Characters, by which they are diſtinguiſhed from all other Trees: but many of theſe are very ſubject to emit large Quantities of Gum from ſuch Parts of the Trees as are deeply cut and wounded; which, in the tender Trees of this Kind, *viz.* Peaches and Nectarines, as it is more common and hurtful, ſo it is found to be the ſureſt Method to bud or inoculate theſe Sorts of Fruits. *Vide* Inoulation.

Then all ſuch Trees as bear Cones will do well upon each other, tho' they may differ in one being evergreen, and the other ſhedding its Leaves in Winter; as is obſervable in the Cedar of *Libanus*, and the Larch-tree, which are found to ſucceed upon each other very well: but theſe muſt be grafted by Approach; for they abound with a great Quantity of Reſin, which is apt to evaporate from the Graft, if ſeparated from the Tree before it be joined with the Stock, whereby they are often deſtroyed; as alſo the Laurel on the Cherry, or the Cherry on the Laurel. All the Maſt-bearing Trees will alſo take upon each other; and thoſe which have a tender ſoft Wood will do well if grafted in the common Way; but thoſe that are of a more firm Contexture, and are ſlow Growers, ſhould be grafted by Approach.

By ſtrictly obſerving this Rule, we ſhall ſeldom miſcarry, provided the Operation be rightly performed, and at a proper Seaſon, unleſs the Weather ſhould prove very bad, as it ſometimes happens, whereby whole Quarters of Fruit-trees miſcarry; and it is by this Method that many Kinds of Exotic Trees are not only propagated, but alſo rendered hardy enough to endure the Cold of our Climate in the open Air; for, being grafted upon Stocks of the ſame Sort, which are hardy, the Grafts are rendered more capable to endure the Cold; as hath been experienced in moſt of our valuable Fruits now in *England*, which were formerly tranſplanted hither from more Southerly Climates, and were at firſt too impatient of our Cold to ſucceed well abroad, but have been, by Budding or Grafting upon more hardy Trees, rendered

rendered capable of reſiſting our ſevereſt Cold.

And theſe different Graftings ſeem to have been greatly in Uſe among the Antients; though they were certainly miſtaken in the ſeveral Sorts of Fruits, which they mention to have ſucceeded upon each other, as the Fig upon the Mulberry, the Plum upon the Cheſtnut, with many others of the like Kind; moſt of which I have already tried, and find them all Miſtakes; or at leaſt they did not mean the ſame Plants which at preſent are called by thoſe Names: tho' I can't help thinking we are apt to pay too much Deference to the Writings of the Antients, in ſuppoſeing them ſeldom to be miſtaken, or to aſſert a Falſhood: whereas, if their Works are carefully examined, it will be found, that they often copied from each other's Writings, without making Experiments to prove the Truth of their Aſſertions: and it is well known, that the Ranging of Plants before *Cæſalpinus*'s Time (which is but about 150 Years ſince) was, by their outward Appearance, or from the ſuppoſed Virtues of them: which Method is now juſtly exploded; and it hath been obſerved, from many repeated Trials, that however Plants may reſemble each other in the Shape and Make of their Leaves, Manner of Shooting, *&c.* unleſs they agree in their Manner of Fruiting, and their other diſtinctive Characters, they will not grow upon each other, tho' grafted with ever ſo much Art.

GRAMEN, Graſs.

There are a great Variety of this Tribe, which are divided into ſeveral *Genera* by ſome of the modern Botaniſts; but I ſhall not inlarge ſo far on this Article, as to enumerate all the Differences which they have made; but ſhall beg leave to inſert ſome of the Sorts which are commonly cultivated in *England.*

The *Species* are;

1. GRAMEN *loliaceum, anguſtiore folio & ſpica, C. B. P.* Red Darnel-graſs, or Rye-graſs.

2. GRAMEN *pratenſe minus ſeu vulgatiſſimum. Raii Syn.* The moſt common Meadow-graſs.

3. GRAMEN *ſecalinum. Ger. Emac.* Tall Meadow Rye-graſs.

4. GRAMEN *ſecalinum & ſecale ſylveſtre. Ger. Emac.* Wild Rye, or Rye-graſs.

5. GRAMEN *ſpicatum, ſemine miliaceo albo. Tourn.* Common *Canary* Graſs.

6. GRAMEN *ſpica triticea, repens vulgare, caninum dictum. Raii Syn.* Common Dogs-graſs, or Quick-graſs, or Couch-graſs.

7. GRAMEN *ſpicatum, durioribus & craſſioribus locuſtis, ſpica brevi. Tourn. French* Haver-graſs.

8. GRAMEN *paniculatum aquaticum, Phalaridis ſemine, folio variegato. Inſt. R. H.* The ſtriped Graſs, or Ribband-graſs.

9. GRAMEN *dactylon eſculentum. C. B. P.* The Manna-graſs.

The four firſt-mentioned Sorts grow pretty common in the Paſtures in moſt Parts of *England*, and are often intermixed in the ſame Paſture; ſo that it is very rare to meet with a Paſture, which hath not ſeveral Sorts of Graſs in it; but the Sort which is generally ſown about *London*, is the Rye-graſs, which is very hardy; and will grow on cold ſour Land better than moſt other Sorts; but as it ſeldom happens, that the Seed is ſaved intire, without a Mixture of other Graſs-ſeeds, it is very difficult to meet with a Paſture, which has not many Sorts in it.

The beſt Seaſon for ſowing Graſs-ſeeds is the Latter-end of *Auguſt*, and the Beginning of *September*, that the Graſs may be well rooted before the Froſt ſets in, which is apt to turn the Plants out of the Ground, when they are not well rooted. This Seed ſhould be ſown in moiſt Weather, or when there is a Proſpect of Showers, which will ſoon bring the Graſs up; for the Earth being at that Seaſon warm, the Moiſture will cauſe the Seeds to vegetate in a few Days: but where this cannot be performed in Autumn, the Seeds may be ſown in the Spring; toward the Middle of *March* will be a good time, if the Seaſon proves favourable.

The Land on which Graſs-ſeed is intended to be ſown, ſhould be well plowed and cleared from the Roots of noxious Weeds, ſuch as Couch-graſs, Fern, Ruſhes, Heath, Gorſe, Broom, Reſt-harrow, *&c.* which, if left in the Ground, will ſoon get the better of the Graſs, and over-run the Land. Therefore in ſuch Places where either of theſe Weeds abound, it will be a good Method to plow up the Surface in *April*, and let it lie ſome time to dry; then lay it in ſmall Heaps, and burn it. The Aſhes ſo produced will ſpread on the Land; and be a good Manure for it. The Method of burning the Land is particularly directed under the Article *Land*, which ſee; eſpecially if it is a cold ſtiff Soil: but where Couch-graſs, Fern, or Reſt-harrow, is in Plenty, whoſe Roots run far under-ground, the Land muſt be plowed two or three times pretty deep in dry Weather, and the Roots carefully harrowed off after each Plowing; which is the moſt ſure Method to deſtroy them. Where the Land is very low, and of a ſtiff clayey Nature, which holds Water in Winter, it will be of ſingular Service to make ſome under-ground Drains to carry off the Wet; which, if detained too long on the Ground, will render the Graſs ſour. The Method of making theſe Drains is preſcribed under the Article *Land*; which ſee.

Before the Seed is ſown, the Surface of the Ground ſhould be made level and fine, otherwiſe the Seed will be buried unequal. The Quantity of Graſs-ſeed for an Acre of Land is uſually three Buſhels, if the Seed is clean, otherwiſe there muſt be a much greater Quantity allow'd: when the Seed is ſown, it muſt be gently harrowed in, and the Ground rolled with a wooden Roller; which will make the Surface even, and prevent the Seeds being blown in Patches. When the Graſs comes up, if there ſhould be any bare Spots, where the Seed has not grown, they may be ſown again, and the Ground rolled, which will fix the Seeds; and the firſt kindly Showers will bring up the Graſs, and make it very thick.

Some People mix Clover and Rye-graſs-ſeeds together, allowing ten Pounds of Clover, and one Buſhel of Rye-graſs to an Acre: but this is only to be done where the Land is deſign'd to remain but three or four Years in Paſture, becauſe neither of theſe Kinds are of long Duration; ſo that where the Land is deſigned to be laid down for many Years, it will be proper to ſow with the Graſs-ſeeds ſome white Trefoil, or *Dutch* Clover; which is an abideing Plant, and ſpreads cloſe on the Surface of the Ground, ſending forth Roots at every Joint; and makes the cloſeſt Sward of any; and is the ſweeteſt Feed for Cattle: ſo that whenever Land is laid down to Paſture, there ſhould always be ſix or eight Pounds of this Seed ſown upon each Acre.

The following Spring, if there ſhould be any Thiſtles, Ragwort, or ſuch other troubleſome Weeds, come up among the Graſs, they ſhould be carefully cut up with a Spaddle before they grow large; and this ſhould be repeated two or three times in the Summer, which will effectually deſtroy them; for if theſe Plants are ſuffered to ripen their Seeds, they will be blown all over the Ground, their Seeds having Down adhering to them, which aſſiſts their Tranſportation; ſo that they are often carried by the Wind to a great Diſtance, and thereby become very troubleſome Weeds to the Graſs. For want of this Care, how many Paſtures may be ſeen almoſt overrun with theſe Weeds, eſpecially the Ragwort; when a ſmall Expence, if applied in time, would have intirely extirpated them! for a Man may go over ſeveral Acres of Land in one Day with a Spaddle, and cut up the Weeds juſt below the Surface of the Ground, turning their Roots upwards; which if done in dry Weather, they will ſoon decay; but this muſt always be performed before the Plants come to have their Seeds formed; becauſe, after that, many Sorts will live long enough to nouriſh their Seeds after they are cut, ſo as to ripen them: and there will be a Supply of Weeds for ſome Years after, which cannot be extirpated without a much greater Expence.

The proper Management of Paſture-land is the leaſt underſtood of any Part of Agriculture: the Farmers never have attended to this, being more inclined to the Plough; tho' the Profits attending that have not of late Years been ſo great, as to encourage them in that Part of Huſbandry: but theſe People never think of laying down Land for Paſture, to continue longer than three Years; at the End of which time they plow it up again, to ſow it with Grain.

Their uſual Method is to ſow Rye graſs and Trefoil with Barley, when they intend to lay down the Ground; or ſometimes ſow only Clover with their Barley: nor is it poſſible to convince theſe People of their Error in ſowing Corn with their Graſs; which they affirm to be uſeful, in ſhading the Graſs; not conſidering how much the Corn draws away the Nouriſhment from the Graſs: but it is in vain to write to theſe People, who are not to be convinced, either by Argument or Experiment; ſo much are they ſwayed by Cuſtom, as not to be led or driven out of their own Method: but as their Practice of Huſbandry has greatly leſſened the Circumſtances of the Farmers, ſo that the Lands are daily falling into the Hands of the Owners; therefore this Part of Huſbandry ſhould by them be principally attended to, as it may be carried on with a much leſs Expence: for Paſture land requires but few Hands to manage; whereas the ſowing of Corn is attended with great Expence, and the Profit is very precarious: but when this is attended with Succeſs, and the Grain at a moderate Price, if the whole Labour is to be paid for, there will be little coming to the Owner for Rent, when the Balance is fairly ſtated; but in this moſt Gentlemen deceive themſelves, and often ſuppoſe they gain by Farming, when perhaps the whole Rent of the Land is loſt: therefore to avoid the Trouble which attends this Sort of Huſbandry, it will be the beſt Method to turn as much of their Land into Paſture, as they can; which, by Grazing and Feeding of Sheep, will be attended with little Expence, and a ſure Profit.

The *Canary* Graſs is ſown in ſome Parts of *England*, for the Seeds, which are uſed to feed Birds: the white Sort is the beſt. Theſe Seeds ſhould be ſown the Beginning of *March*, on a moderate light Soil; for they do not thrive well on ſtrong cold Land. The Surface of the Ground ſhould be well ſtirred, and made even, before the Seeds are ſown, that they may be equally buried. Three Buſhels of this Seed are ſufficient for an Acre of Land. When the Seed is ſown, which ſhould be done in dry Weather, the Ground muſt be gently harrowed to bury the Seeds, and then the Whole ſhould be rolled with a wooden Roller; which will ſmooth the Surface of the Ground, and prevent the Seeds from being removed by ſtrong Winds. When the Graſs is come up, if there ſhould be any rank Weeds amongſt it, they muſt be cut up with a Spaddle, as was before directed; for if they are permitted to grow, they will do great Damage to the Graſs. The Middle of *Auguſt*, the Seeds will ripen, when it ſhould be cut, and, as ſoon as it is dry, ſhould be threſhed out, or ſtacked; for if it remains abroad, the Birds will devour it: if the Crop arrives to any Degree of Perfection, there will be upward of four Quarters on an Acre of Land.

The Couch-graſs is one of the moſt troubleſome Weeds in Corn-lands and Gardens, and is with great Difficulty extirpated: for the Roots of this Kind run very far underground, and every ſmall Part of the Root will grow; ſo that if the Roots are torn into ſmall Pieces, every one of them will propagate where-ever they are left in the Ground. Where the Land is ſtocked with this Graſs, it ſhould be plowed two or three times in dry Weather, during the Heat of the Summer; and after each Plowing, the Ground ſhould be carefully harrowed, to draw the Roots out, which ſhould be drawn into Heaps, and then carted off the Ground; for if the Roots are left, they will ſtrike into the Ground after the firſt Shower of Rain, and ſoon become troubleſome: ſuch foul Land is very unfit to ſow with Grain; therefore it will be proper to ſow with Turneps, and Beans or Peas, which require hoeing two or three times: which, if done in very dry Weather, will be of great Uſe to deſtroy the Couch-graſs. Where this Method is not obſerved, it is common to ſee large Tracts of Land, which are ſown with Grain, ſo much overrun with this Graſs, that many times the Crop doth not produce the ſame Quantity of Grain as was ſown on the Ground.

In Gardens this Graſs is much eaſier deſtroyed than in large Fields, becauſe the Ground being frequently dug, Care may be taken to pick out the Roots in digging; and if there be any left, which appear afterward, the Roots may be eaſily forked out; ſo that in one Year it may be deſtroyed, if proper Care be taken But where the Ground is very full of the Roots of Couch-graſs, and the Land will admit of being trenched three Spits deep, that will be the moſt effectual Way of deſtroying it, and will be cheaper than picking out the Roots by Hand; for by trenching the Ground ſo deep, the Couch will be buried near two Feet, which will rot it; and turning the Ground ſo deep, will be moreover of great Service to it.

This Sort of Graſs is what the College of Phyſicians have ordered to be uſed in Medicine; ſo that whenever Graſs is preſcribed, this is what is meant.

The bearded wild Oats, or Haver, are frequently found amongſt Corn in ſeveral Parts of *England*, where ſometimes they become troubleſome Weeds; for if they are not drawn out of the Corn before it is ripe, it will be difficult to be ſeparated from the Corn in the Barn: but as they are annual Plants, they may be eaſily deſtroyed with a little Care.

The ſtriped Graſs is preſerved in many Gardens for the Beauty of its variegated Leaves, which will continue freſh the greateſt Part of the Year.

This Sort is eaſily propagated by parting the Roots, either in Spring or Autumn; for every Off-ſet will increaſe to be a large Root in one Year's time. It will grow on any Soil, or in any Situation; therefore may be planted in any abject Part of the Garden, where it will thrive, and afford an agreeable Variety. This Sort is by many Perſons called Ribband-graſs, from the Stripes of White and Green, which run the whole Length of the Blade, like the Stripes in ſome Ribbands.

Clover-graſs. *See* Trifolium.
Saint Foin. *See* Onobrychis.
La Lucerne. *See* Medica.
Noneſuch. *See* Melilotus.
Trefoil. *See* Trifolium.
Spurry. *See* Spergula.

GRANADILLA, Paſſion-flower.

The *Characters* are;

It hath a double Calyx, *the firſt conſiſting of three Leaves, the other of five Leaves, which expand in form of a Star: the Flowers conſiſt of five Leaves each, and are of a roſaceous Form: in the Centre of the Flower ariſes the Pointal, with a Crown fringed at the Bottom, but furniſhed with a tender Embryo at the Top, on which ſtand three Clubs, under which are the* Stamina *with rough obtuſe* Apices, *which always incline downwards: the Embryo turns to an oval or globular Fruit, fleſhy, and conſiſting of one Cell, which is full of Seeds adhering to the Sides.*

The *Species* are;

1. GRANADILLA *pentaphyllos, latioribus foliis, flore cæruleo magno. Boerh. Ind.* Common or broad-leav'd Paſſion-flower.

2. GRANADILLA *pentaphyllos, anguſtioribus foliis, flore cæruleo magno.* Narrow-leav'd Paſſion-flower.

3. GRANADILLA *pentaphyllos, anguſtioribus foliis, flore minore pallido cæruleo ſerotino.* Late narrow-leav'd Paſſion-flower, with a leſſer and paler Flower.

4. GRANADILLA *Hiſpanis, Flos Paſſionis Italis. Col. in Recch.* Three-leav'd Paſſion-flower.

5. GRANADILLA *folio tricuſpidi, flore parvo flaveſcente. Tourn.* Paſſion-flower with a three-pointed Leaf, and a ſmall yellowiſh Flower.

6. GRANADILLA *flore albo, fructu reticulato. Boerh. Ind.* White Paſſion-flower, with a netted Fruit.

7. GRANADILLA *fœtida, folio tricuſpidi villoſo, flore purpureo variegato. Tourn.* Stinking Paſſion-flower, with a three-pointed hairy Leaf, and a purple variegated Flower, called by the Inhabitants of *Barbados*, Love in a Miſt.

8. GRANADILLA *fructu citriformi, foliis oblongis. Tourn.* Paſſion-flower with a Fruit ſhaped like a Citron, and an oblong Leaf, called by the Inhabitants of *Barbados*, Water-lemon.

9. GRANADILLA *latifolia, fructu maliformi.* Broad-leav'd Paſſion-flower, with an apple-ſhap'd Fruit.

10. GRANADILLA *flore ſuave-rubente, folio bicorni. Tourn.* Paſſion-flower with a Leaf divided into two Horns, and a ſoft red Flower.

11. GRANADILLA *folio amplo tricuſpidi, fructu olivæ forma. Tourn.*

Paſſion-flower with a three-pointed Leaf, and an olive-ſhaped Fruit.

12. Granadilla *folio anguſto tricuſpidi, fructu olivæ forma. Tourn.* Paſſion-flower with a narrow three-pointed Leaf, and an olive-ſhaped Fruit.

13. Granadilla *androſæmi folio, fructu jujubino. Tourn.* Paſſion-flower with a Tutſan-leaf, and a Fruit like the Jujube.

14. Granadilla *folio haſtato, flore cæruleo majore. Houſt.* Paſſion-flower with a ſpear-pointed Leaf, and a large blue Flower.

15. Granadilla *folio oblongo ſerrato, flore purpureo. Houſt.* Paſſion-flower with an oblong ſerrated Leaf, and a purple Flower.

16. Granadilla *folio glabro tricuſpidi & anguſto, flore vireſcente minimo. Tourn.* Paſſion-flower with a narrow ſmooth three-pointed Leaf, and a ſmall greeniſh Flower.

17. Granadilla *quæ Coanene-pilli, ſeu Contrayerva Hernand. Houſt.* Paſſion-flower or Contrayerva of *Hernandez*.

The firſt Sort here mentioned is the moſt common in all the *Engliſh* Gardens; and, notwithſtanding what Mr. *Bradley* has affirmed, is very different from the ſecond and third Sorts. Nor did I ever ſee any Fruit upon this Kind, tho' planted in many different Soils and Situations; whereas the ſecond Sort rarely fails to produce Fruit every Year; and in order to obſerve the Truth of this, I planted one of each Kind in the ſame Soil and Situation, where the ſecond Sort has produced Fruit every Year ſince; but the firſt has not as yet ſhewn any Appearance thereof. The ſecond Sort does alſo differ in the Colour of the Flower, which is ſomewhat paler than the firſt, and the Petals are not quite ſo blunt at their Extremities.

The third Sort has very narrow Leaves, and the young Branches are of a purpliſh Colour: it is a very great Shooter, but does not flower until the Latter-end of Summer: the Flowers of this Kind are ſmaller, and of a paler Colour, than either of the former. There is alſo a Variety in this Plant with yellow-blotch'd Leaves, which ſome People preſerve as a great Curioſity: but as this Variegation is but ſmall, and hardly to be ſeen in vigorous Shoots, it is ſcarce worth mentioning.

Theſe three Sorts are extreme hardy, and will endure our ſevereſt Cold in the open Air; tho' in very hard Winters their Shoots are ſubject to be killed, and ſometimes their whole Stems quite to the Surface: yet it rarely happens, that it deſtroys the whole Plant; for if the Roots are permitted to continue undiſturb'd, they ſeldom fail to ſhoot up again in the ſucceeding Summer.

Theſe are propagated by laying down their Branches, which in one Year's time will take good Roots, and may then be removed to the Places where they are deſigned to remain; the beſt Seaſon for tranſplanting theſe Plants is towards the Latter-end of *October*, or the End of *March*, or the Beginning of *April*, juſt before they begin to ſhoot; for if they are removed earlier, and it ſhould prove dry froſty Weather, with cold North-eaſt Winds, as it often happens in *March*, theſe Plants will ſcarcely endure it, which is the Occaſion of the Death of ſo many of them, as is often obſerved upon Tranſplantation; but thoſe which are removed early in Autumn, rarely fail.

The Plants ſhould be planted againſt a Wall, or other Building, which ſhould face the South-eaſt or

South-weſt; or elſe intermix'd amongſt flowering Shrubs in Quarters; where, if they are regularly trained up to Poles, they will flower extremely well, and have a very good Effect in diverſifying ſuch Plantations. The beſt Seaſon for pruneing of theſe Plants is in the Spring, after the cold Weather is paſt; for if they are prun'd very early, and it ſhould happen to be froſty Weather afterward, it would endanger moſt of the young Branches: therefore it is much the better Way to let the whole Plant remain untouch'd, ſuffering the rude Part to hang down before the Stem and Branches, during the Winter-ſeaſon, which will be of Service in protecting them from the Severity of the Cold; and if at *Michaelmas* you lay a little Dung, or other Mulch, about a Foot thick, upon the Surface of the Ground near the Stems, it will effectually guard their Roots from Froſt; which Method ſhould be conſtantly practis'd with ſuch as are planted in open Quarters. The Manner of Pruning is nothing more than to cut off all the ſmall weak Shoots, and ſhorten the ſtrong ones to about three Feet in Length: or, if the Building is high, againſt which they are planted, they may be left much longer, tho' you ſhould be careful not to leave them too long; for as they are vigorous growing Plants, they will ſoon get above the Building, and become troubleſome. Thoſe that are planted in Quarters, and trained to Stakes, muſt be cut ſhorter, in order to have the Flowers nearer the Ground; theſe, when their Seaſon for Flowering is paſt, ſhould have a little Mulch laid about their Roots; and then their Stakes may be taken away, ſuffering their Branches to lie upon the Ground, which will alſo be of Service to protect the Plants from the Injuries of the Winter; and in the Beginning of *April* they may be trimmed, and ſtaked up again: and when the Plants begin to ſhoot, they ſhould conſtantly be kept trained up to the Stakes, whereby they will not only appear handſome, but the Place will be clearer to work in, as alſo to paſs through.

The fruit-bearing Kind may alſo be propagated, by ſowing of the Seeds in the Spring of the Year, in Pots filled with light rich Earth, which ſhould be plunged into a moderate Hot-bed, to facilitate the Growth of the Seeds; and when the Plants are come up, you muſt harden them by degrees to bear the open Air: in theſe Pots they ſhould remain until the ſucceeding Spring, obſerving to ſhelter them in Winter under a Frame, or elſe place the Pots into the Earth under a warm Wall, to prevent their Roots from freezing through the Pots; and the Beginning of *April* you may ſhake them out of the Pots, and divide the Plants from each other, planting them in the Places where they are deſigned to remain; or, if you have not the Ground ready, they may be put each into a ſeparate Pot; ſo that they may at any time be turned out into the Ground, without diſturbing their Roots; for they are difficult Plants to remove when old.

Theſe Plants may alſo be planted to cover Arbours or Seats in warm-ſituated Places, where they will flower extremely well, and anſwer the Purpoſes of thoſe Arbours, as well as any other Plants which are at preſent made uſe of.

The fourth Sort is ſomewhat tenderer than any of the former: this dies to the Surface every Winter, and riſes again the ſucceeding Spring; and, if the Summer be warm, will produce great Quantities of Flowers, which are near as large as the common Sort; but the Petals of the Flower are narrower, and ſtriped with Purple. This is the firſt Sort of Paſſion-flower which we find deſcribed in old Botanic Authors, and is what *Parkinſon* has figur'd and deſcrib'd in his Flower-garden; but ſince the other Sorts have been brought into *Europe*, they have ſo much prevail'd, that this laſt-mention'd is rarely to be found, except in ſome few curious Gardens. This may be increaſed by parting of the Roots, which ſhould be done the Beginning of *April*, and muſt be either planted into Pots filled with light rich Earth, or in a good warm Border under a South Wall; for it is ſubject to be deſtroyed in very hard Weather. The Pots, wherein theſe Plants are ſet, may be plunged into a gentle Hot-bed, in order to promote their taking Root, it being ſomewhat difficult in rooting after it is removed; and this will promote its flowering, provided you do not draw it too much: and by this means alſo you may propagate the Plant; for, when it has made pretty ſtrong Shoots, if you lay them down, and apply a gentle Warmth to the Pots, they will puſh out Roots in two or three Months time fit for tranſplanting, which if done before the cold Weather comes on in Autumn, they will be ſettled ſo as to endure the Winter.

The Seeds of this Plant are many times brought over from *America* (where the Plant grows in great Plenty), which, when obtained, may be ſown in a moderate Hot-bed in the Spring, and treated as was before directed for the common Sort, with this Difference; *viz.* That this, being more tender, ſhould not be expos'd to the open Air ſo ſoon; and, in Winter, the Pots ſhould be plunged into an old Bed of Tanners Bark, which has loſt moſt of its Heat, and it ſhould be covered with Glaſſes and Mats in very bad Weather; but, when it is mild, they ſhould have as much open Air as poſſible; you muſt alſo obſerve, not to give them much Water in Winter.

The fifth Sort dies to the Ground every Year, as the laſt, and riſes again the ſucceeding Spring: this is very hardy, enduring our ſevereſt Cold in the open Ground, and increaſes very faſt by its ſpreading Roots; but this ſeldom produces Flowers with us, and when it doth, they are ſo ſmall and ill-colour'd, that it ſcarce deſerves a Place in a Garden, except for adding to the Variety.

The ſixth Sort is an annual Plant with us, and requires to be raiſed upon an Hot-bed; the Seeds of this ſhould be ſown in *February* with Amaranthus's, *&c.* And when the Plants are come up, they ſhould be tranſplanted ſingly into ſmall Pots filled with light Earth, and plunged into a freſh Hot-bed, to bring them forward; and in a Month's time after (when the Bed will begin to loſe its Heat) you ſhould prepare a freſh Hot-bed; then ſhake the Plants out of the ſmall Pots, and put them into larger, being careful not to break too much of the Earth from the Roots, plunging the Pots into the new Bed, in which Place they may remain a Month longer, obſerving to water them as they ſhall require, as alſo to give them Air in proportion to the Heat of the Weather, when you may remove them into the Stove, where they may be protected from the Cold of the Nights, and great Rains; in which Situation they will produce great Numbers of Flowers, and ripen their Seeds perfectly well.

In Autumn they decay as ſoon as they have perfected their Fruit.

The ſeventh Sort is ſomewhat like the ſixth, but differs therefrom in the Shape of its Leaves, which, in the ſixth Sort, are large and narrow, but, in the ſeventh, broad and angular, approaching to the Shape of the white Briony, and are rougher, and of a ſtronger Scent: the Flowers alſo of this are ſtrip'd in the Middle with Purple, whereas the others are all white; nor doth this Plant often produce its Flowers the firſt Year with us, but muſt be preſerved in a warm Stove thro' the Winter; and the following Summer it will produce Flowers, and perfect its Seeds.

This Plant muſt be ſown on an Hot-bed in the Spring, and managed as was directed for the laſt, with this Difference only; *viz.* that as this ſeldom flowers the firſt Summer, ſo thoſe Plants which you intend to preſerve thro' the Winter, ſhould be trained up to endure the open Air in the Summer, whereby they will be better able to live in Winter.

This is found in great Plenty in many Places in the *Weſt-Indies*, where the Inhabitants call it *Love in a Miſt* The Seeds are frequently brought into *England* by that Name. *Pere Plumier* ſays, That he found it in great Plenty in the Hedges in the Iſland of *Martinico*, where he obſerved the Flowers conſtantly open'd before the Riſing of the Sun, after which it ſeldom continued an Hour. He alſo ſays, That it continues flowering almoſt throughout the whole Year; but that the Birds, Lizards, and Ants, are ſo fond of this Fruit, that it is very difficult to find them intire when ripe. The Empalement of this Flower is netted; and this being ſtretched out beyond the Petals, the Flowers ſeem to be covered with an Hood, which gave Occaſion for the Name of *Love in a Miſt*. This Empalement continues, and afterward ſurrounds the Fruit.

The eighth Sort is a durable Plant, growing woody, and is more arboreſcent than any other Species of this Plant which I have yet ſeen. The Seeds of this are often brought over from *Barbados*, where it is cultivated in the Gardens for the Goodneſs of its Fruit, altho' the Flowers (which are finer than thoſe of the common Sort) render it worthy of a Place in a good Garden, had the Plant no other good Qualities to recommend it.

This Plant may be raiſed by ſowing the Seeds upon an Hot-bed, as was directed for the two other Sorts; and muſt be afterward tranſplanted into Pots, and managed in the ſame manner; but this never produces its Flowers until the ſecond or third Year after ſowing: ſo it muſt be carefully preſerved in Winter in a warm Stove with other tender Plants, which come from the ſame Country: but, in the Summer, it ſhould have a good Share of free Air, eſpecially in warm Weather, tho' it will not bear to be wholly expoſed to the open Air.

It may alſo be propagated by laying down ſome of its Branches in the Spring, which, in two Months time, will ſtrike Root, and may then be tranſplanted into Pots, and managed as the old Plants. During the Summer-ſeaſon theſe Plants will require to be plentifully watered (eſpecially if they are kept warm); but in Winter they ſhould not have too much Wet; therefore you ſhould often refreſh them, but do not give them much at each time. The Heat, in which they thrive beſt in Winter, is that marked *Piemento*, upon the

Botanical Thermometers; but in Summer they will require a much greater Share of Warmth.

I don't find any Authors, who have written on this Plant, mention its growing wild in any Parts of the *Weſt-Indies*. *Pere Plumier* ſays, It is cultivated in Gardens, to cover Arbours and Seats, for the Goodneſs of its Fruit, which ripens in *April* or *May*, and is of a wonderful refreſhing Nature; and is commonly uſed in Fevers as a Cordial Syrup, in the ſtead of Rob of Gooſberries. The *French* call the Fruit of this Plant *Pommes de Liane*; and the *Engliſh*, Water-lemon, as chiefly delighting to grow in a moiſt Soil. The Flowers of this Plant have a very agreeable Scent, and are extremely beautiful.

The ninth Sort alſo is an abiding Plant, but never becomes ſo woody as the former: the Stalks are commonly of a green herbaceous Colour, and triangular: the Leaves are broader and ſhorter, but not ſo thick as thoſe of the former, and of a livelier green Colour: the Flowers of this Kind are very large, and of a fine red Colour, inclining to Purple, and very ſweet: the Fruit is about the Size of a middling Apple, and of an agreeable Flavour.

This may alſo be propagated by Seeds or Layers, as the former Sort, and muſt be managed exactly in the ſame manner; ſo that I ſhall not repeat here, but only obſerve, that this will alſo grow from Cuttings, if planted in an Hot-bed during any of the Summer-months.

Pere Plumier obſerv'd this Plant in the Iſle of *St. Domingo*: it flowers there in *April*.

The tenth Sort is very common in moſt Parts of the *Caribbee* Iſlands. I have alſo received Seeds of it from the *Bahama* Iſlands, from which I have raiſed Plants of this Kind that have produced Flowers and Fruits in the Phyſic-garden at *Chelſea*. It requires much the ſame Management as the two former Sorts, tho' I could never propagate this either by Cuttings or Layers. It requires a great Share of Water, eſpecially in the Summer-ſeaſon, without which it will rarely flower; but in Winter it muſt have it more ſparingly, tho' it will often require to be refreſhed. This delights in the ſame Degree of Heat with the former.

The Flowers of this Plant are very ſmall, and of ſhort Duration; nor is there any great Beauty in the Plant, or any thing valuable in its Fruit, to recommend it: however, it may have a Place in great Collections of Plants, to add to the Variety.

The eleventh and twelfth Sorts I have had come up in the Earth, which came from the *Weſt-Indies*; but I have not as yet ſeen their Flowers: theſe may be preſerved in the ſame manner as the former, but delight to grow in a moiſt Soil; therefore muſt be often refreſhed with Water. Neither of theſe promiſe to be of long Continuance, tho' I am apt to believe they may be propagated by Layers.

The thirteenth Sort is alſo a perennial Plant, which is very common in divers Parts of the *Weſt-Indies*: the Flowers of this Kind are very ſmall, and of a greeniſh Colour, without Smell; and the Fruit is of a fine purple Colour, when ripe. It requires the ſame Management as the former, and may be propagated by laying down the Branches early in the Spring.

The Seeds of the four laſt-mentioned Sorts were ſent from *La Vera Cruz*, by the late Dr. *William Houſtoun*: the fourteenth Sort is new, and has not been mentioned by any

Botanic Writer, before the Doctor. Since which time, this and the fifteenth Sort have been figured and deſcribed by Mr. *John Martyn*, Profeſſor of Botany at *Cambridge*, in his fourth and fifth Decades of rare Plants. Theſe two Sorts produce very beautiful Flowers; and the fifteenth continues flowering near three Months, which renders it more valuable. The other two Sorts, having little Beauty in their Flowers, are only preſerved by thoſe who are curious in the Study of Botany. Theſe Plants are tender, and require to be placed in a Bark-ſtove; where they will climb to a great Height, and produce great Plenty of Flowers. There is now an Eſpalier in a very large Stove in the Phyſic-garden, which is ſixteen Feet high, and covered over with theſe Kinds of Paſſion-flowers, which has a fine Effect. But as the Plants will ſoon root thro' theſe Pots into the Bark-bed, ſo, if they are diſturbed, it will greatly check their Growth; therefore they ſhould be permitted to remain in the Bark: or if, in the firſt making of the Stove, a Border be taken out of the Pit (on the Backſide next the Flues) about two Feet wide, which may be boarded up with ſtrong Ship-plank, and this Border filled with Earth, into which theſe Plants may be planted; they may remain ſeveral Years undiſturbed in theſe Borders, and will make a fine Appearance. The Reaſon of my adviſing this Border to be divided from the Bark-pit with Boards, rather than by a Brick-wall, is, that the Heat of the Bark may more eaſily warm the Borders, which will be of great Service to the Plants.

Theſe four Sorts may be propagated from Seeds, which ſhould be ſown on an Hot-bed in the Spring, and treated in the ſame manner as hath been directed for the eighth and ninth Sorts.

GRAPES. *Vide* Vitis.

GRASS. The *Engliſh* Graſs is of ſo good a Quality for Walks or Graſs-plats, that if they be kept in good Order, they have that exquiſite Beauty that they cannot come up to in *France*, and ſeveral other Countries.

But green Walks and green Plats are, for the moſt part, not made by ſowing the Graſs-ſeed, but by laying Turfs: and indeed the Turfs from a fine Common or Down are much preferable to ſown Graſs.

In ſowing a fine green Plat, there is a Difficulty in getting good Seed: it ought not to be ſuch as it taken out of an Hay-loft without Diſtinction; for that Seed is always mixed, ſo that there will be many Sorts of Graſs, which will be rank, and the Stalks large, ſo will never make a good Sward; but, on the contrary, will come to nothing but Tufts of Weeds and Quick-graſs, very little better than that of the common Fields.

If Walks or Plats be made by Sowing, the beſt way is to procure the Seed from thoſe Paſtures where the Graſs is naturally fine and clear, or elſe the Trouble of keeping it from ſpiry and benty Graſs will be very great, and it will ſcarce ever look handſome.

In order to ſow Graſs-ſeed, the Ground muſt be firſt dug or broken up with a Spade; and when it has been dreſſed, and laid even, it muſt be very finely raked over, and all the Clods and Stones taken off, and covered over an Inch thick with good Mould to facilitate the Growth of the Seed: this being done, the Seed is to be ſown pretty thick, that it may come up cloſe and ſhort; and it muſt be raked over again to bury and cover the Seed, that if the Weather ſhould happen to be windy, it may not be blown away.

As to the Seaſon of ſowing Graſs, the latter End of *Auguſt* is a good time; becauſe the Seed naturally requires nothing but Moiſture to make it grow: if it be not ſown till the latter End of *February*, or the Beginning of *March*, if the Weather proves dry, it will not ſo ſoon make the Walks or Quarters green. It is alſo beſt to ſow it in a mild Day, and inclining to Rain; for that, by ſinking down the Seed in the Earth, will cauſe it to ſhoot the ſooner. But where Graſs is ſown in Gardens, either for Lawns or Walks, there ſhould always be a good Quantity of the white Trefoil or *Dutch* Clover ſown with it; for this will make a fine Turf much ſooner than any other ſown Graſs; and will continue a better Verdure than any of the graſs Tribe.

After the Seed is well come up, and the Graſs is very thick, and of a beautiful Green, it will require a conſtant Care to keep it in Order: this conſiſts in mowing the Graſs often; for the oftener it is mowed, the thicker and handſomer it grows: it muſt alſo be rolled with a Cylinder or Roller of Wood, to level it as much as poſſible.

If Graſs be neglected, it will run into Quick-graſs and Weeds; and if it does ſo, there is no way to recover it, but either by ſowing it, or laying it over again, and that once in every two Years: but if the Ground be well cleared from the Roots of ſtrong Weeds, and the Turf be taken from a fine level Common, it will continue handſome for ſeveral Years, provided it be well kept.

In order to keep Graſs-plats or Walks handſome, and in good Order, in Autumn you may ſow ſome freſh Seed over any Places that are not well filled, or where the Graſs is dead, to renew and furniſh them again: but there is nothing which improves Graſs ſo much as conſtant rolling and polling it, to deſtroy Wormcaſts, and thereby the Turf is rendered fine.

It is a general Practice, when Turf is laid in Gardens, to cover the Surface of the Ground under the Turf, either with Sand, or very poor Earth: the Deſign of this is to keep the Graſs fine, by preventing its growing too rank. This is proper enough for very rich Ground, but is not ſo for ſuch Land as is but middling or poor; for when this is practiſed in ſuch Places, the Graſs will ſoon wear out, and decay in Patches.

When Turf is taken from a Common or Down, there ſhould be regard had to the Cleanneſs of it, and not to take ſuch as is full of Weeds; for it will be a very tedious Piece of Work, to weed them out after the Turf is laid; and unleſs this is done, the Graſs will never appear handſome.

Where Turf is deſigned to remain for Years without renewing, there ſhould be Dreſſing laid upon it, every other Year, either of very rotten Dung, or Aſhes; and where it can be eaſily procured, very rotten Tan is a good Dreſſing for Graſs: but theſe Dreſſings ſhould be laid on early in Winter, that the Rain may waſh them into the Ground, before the Drought of the Spring comes on; otherwiſe they will occaſion the Graſs to burn, when the Warmth of Summer begins. Where Graſs is ſo dreſſed, and kept well rolled and mowed, it may remain very beautiful for many Years: but where it is not dreſſed, or fed with Sheep, it will rarely continue handſome more than eight or ten Years.

GRAVEL and Graſs are naturally Ornaments to a Country-ſeat, and are the Glory of the *Engliſh* Gardens, and Things by which we excel all other Nations, as *France*, *Holland*, *Flanders*, &c.

There are different Sorts of Gravel; but, for thoſe who can conveniently have it, I approve of that Gravel on *Black-heath*, as preferable to moſt that we have in *England*; it conſiſting of ſmooth even Pebbles, which, when mixed with a due Quantity of Loam, will bind exceeding cloſe, and look very beautiful, and continue handſome longer than any other Sort of Gravel, which I have yet ſeen.

Some recommend a Sort of Iron-mould Gravel, or Gravel with a little binding Loam amongſt it, than which nothing, they ſay, binds better when it is dry: but in wet Weather it is apt to ſtick to the Heels of one's Shoes, and will never appear handſome.

Sometimes Loam is mixed with Gravel that is over-ſandy or ſharp, which muſt be very well blended together, and let lie in Heaps; after which it will bind like a Rock.

There are many Kinds of Gravel which do not bind, and thereby cauſe a continual Trouble of rolling to little or no Purpoſe: as for ſuch,

If the Gravel be looſe or ſandy, you ſhould take one Load of ſtrong Loam, and two of Gravel, and ſo caſt them well together.

There are many different Opinions about the Choice of Gravel: ſome are for having the Gravel as white as poſſible; and in order to make the Walks more ſo, they roll them well with Stone-rollers, which are often hewn by the Maſons, that they may add a Whiteneſs to the Walks: but this renders it very troubleſome to the Eyes, by reflecting the Rays of Light ſo ſtrongly; therefore this ſhould ever be avoided; and ſuch Gravel as will lie ſmooth, and reflect the leaſt, ſhould be preferred.

Some ſcreen the Gravel too fine; which is an Error: for if it be caſt into a round Heap, and the great Stones only raked off, it will be the better.

Some are apt to lay Gravel-walks too round; but this is likewiſe an Error, becauſe they are not ſo good to walk upon, and, beſides, it makes them look narrow: one Inch is enough in a Crown of five Feet; and it will be ſufficient, if a Walk be ten Feet wide, that it lies two Inches higher in the Middle than it does on each Side; if fifteen Feet, three Inches; if twenty Feet, four; and ſo in proportion to thirty Feet; which is wider than any Walk in a Garden ought to be made.

For the Depth of Gravel-walks, ſix or eight Inches may do well enough; but a Foot Thickneſs will be ſufficient for any; but then there ſhould always be a Depth of Rubbiſh laid under the Gravel, eſpecially if the Ground is wet; in which Caſe there cannot be too much Care to fill the Bottom of the Walks with large Stones, Flints, Brick-rubbiſh, or any other Materials, which can be beſt procured; which will drain off the Moiſture from the Gravel, and prevent its being poachy in wet Weather.

In the making of Gravel-walks, there muſt be great regard had to the Level of the Ground, ſo as to lay the Walks with eaſy Deſcents toward the low Parts of the Ground, that the Wet may be drained off eaſily; for when this is omitted, the Water will lie upon the Walks a conſiderable time after hard Rains, which will render them unfit for Uſe, eſpecially where the Ground is naturally wet or ſtrong: but where the Ground is level, and there are no Declivities to carry off the Wet, it will be proper to have Sink-ſtones laid by the Sides of the Walks, at convenient Diſtances, to let off the Wet; and where the Ground is naturally dry, that the Water will ſoon ſoak away, the Drains from the Sink-ſtones may be contrived ſo as to convey the Water in Seſſpools, from which the Water will ſoak away in a ſhort time: but in wet Land, there ſhould be under-ground Drains, to convey the Wet off, either into Ponds, Ditches, or the neareſt Place to receive it; for where this is not well provided for, the Walks will never be ſo handſome, or uſeful.

The Month of *March* is the propereſt Time for laying Gravel: it is not prudent to do it ſooner, or to lay Walks in any of the Winter-months before that time.

Some indeed turn up Gravel-walks in Ridges in *December*, in order to kill the Weeds: but this is very wrong; for beſides that it deprives them of the Benefit of them all the Winter, it does not anſwer the End for which it is done, but rather the contrary; for tho' it does kill the Weeds for the preſent, yet it adds a Fertility to them, as to the great future Increaſe of both them and Graſs.

If conſtant rolling them after the Rains and Froſt will not effectually kill the Weeds and Moſs, you ſhould turn the Walks in *March*, and lay them down at the ſame time.

In order to deſtroy Worms that ſpoil the Beauty of Gravel or Graſs-walks, ſome recommend the waſhing them well with Water, in which Walnut-tree-leaves have been ſteeped, and made very bitter, eſpecially thoſe Places moſt annoyed with them; and this, they ſay, as ſoon as it reaches them, will make them come out haſtily, ſo that they may be gathered: but if, in the firſt laying of the Walks, there is a good Bed of Lime-rubbiſh laid in the Bottom, it is the moſt effectual Method to keep out the Worms; for they don't care to harbour near Lime.

GREEN HOUSE, or Conſervatory.

As of late Years there have been great Quantities of curious Exotic Plants introduced into the *Engliſh* Gardens, ſo the Number of Green-houſes or Conſervatories has increaſed; and not only a greater Skill in the Management and Ordering of theſe Plants has increaſed therewith, but alſo a greater Knowlege of the Structure and Contrivance of theſe Places, ſo as to render them both uſeful and ornamental, hath been acquired; and ſince there are many Particulars to be obſerved in the Conſtruction of theſe Houſes, whereby they will be greatly improv'd, I thought it neceſſary not only to give the beſt Inſtructions for this I was capable of, but alſo to give a Deſign of one in the manner I chooſe to erect it, upon the annexed Copper-plate.

As to the Length of theſe Houſes, that muſt be proportion'd to the Number of Plants they are to contain, or the Fancy of the Owner; but their Depth ſhould never be greater than their Height in the Clear; which in ſmall or middling Houſes may be ſixteen or eighteen Feet; but for large ones, from twenty to twenty-four Feet, is a good Proportion; for if the Green-houſe is long, and too narrow, it will have a bad Appearance both within and without; nor will it contain ſo many Plants, if proper room be allowed for paſſing in Front,

A. The Ground Plan of the Green houſe

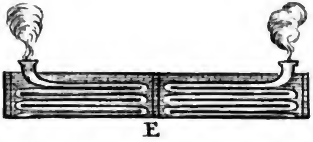
B.B. The Ground Plan of the two Stoves.

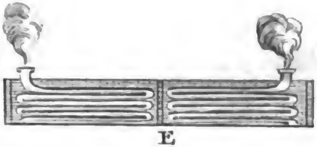
C.C.C. The Sheds behind the Green houſe & Stoves.

D.D. The Paſsage of communication between the Green houſe and Stoves where the Stairs are Placed which lead to yᵉ Rooms over yᵉ Green houſe

E.E. The Section of the Flues in the back of the Stoves.

F. The upright of the Green houſe and Stoves.





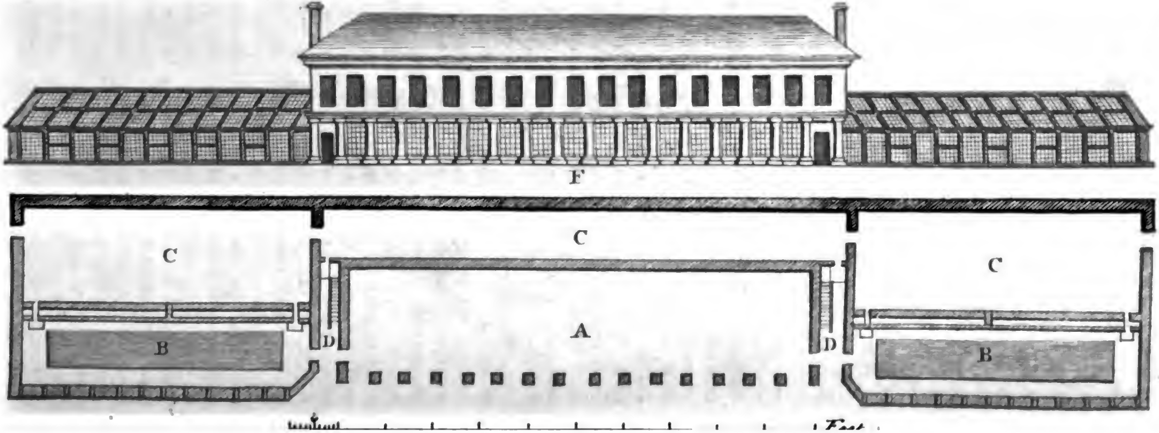


Plate 1. facing

and on the Backſide, of the Stands, on which the Plants are placed: and on the other hand, if the Depth of the Green-houſe is more than twenty-four Feet, there muſt be more Rows of Plants placed to fill the Houſe, than can with Conveniency be reached in Watering and Cleaning; nor are Houſes of too great Depth ſo proper for keeping of Plants, as thoſe of moderate Size.

The Windows in Front ſhould extend from about one Foot and an half above the Pavement, to within the ſame Diſtance of the Cieling, which will admit of a Cornice round the Building, over the Heads of the Windows. As it is neceſſary to have theſe Windows ſo long, it will be impoſſible to make them in proportion as to their Breadth; for if in the largeſt Buildings the Saſhes are more than ſeven, or ſeven and an half Feet broad, they will be ſo heavy, and troubleſome to move up and down, as to render it very difficult for one Perſon to perform; beſides, their Weight will occaſion their ſoon decaying. There is alſo another Inconvenience in having the Windows too broad; which is, that of fixing proper Shutters to them, in ſuch a manner, as that they may fall back cloſe to the Piers, ſo as not to be incommodious; or, when open, to obſtruct any Part of the Rays of Light from reaching the Plants. The Piers between theſe Windows ſhould be as narrow as poſſible to ſupport the Building; for which Reaſon I ſhould chooſe to have them of Stone, or of hard well-burnt Bricks; for if they are built with fine-rubb'd Bricks, thoſe are generally ſo ſoft, that the Piers will require to be made thicker, and the Building will not be ſo ſubſtantial; eſpecially if you have any Rooms over the Green-houſe: which is what I would always adviſe, as being of great Uſe to keep the Froſt out in very hard Winters. If theſe Piers are made of Stone, I would adviſe them to be two Feet and an half broad in Front, and ſloped off backward to about eighteen Inches; whereby the Rays of the Sun will not be taken off or obſtructed by the Corners of the Piers; which would happen, if they were ſquare: but if they are built with Bricks, it will be proper to make them three Feet broad in Front, otherwiſe they will be too weak to ſupport the Building: theſe I would alſo adviſe to be ſloped off in the manner directed for the Stone.

At the Back of the Green-houſe there may be erected an Houſe for Tools, and many other Purpoſes; which will be extremely uſeful, and alſo prevent the Froſt from entering the Houſe that Way; ſo that the Wall between theſe need not be more than two Bricks and an half in Thickneſs; whereas, were it quite expos'd behind, it ſhould be at leaſt three Bricks in Thickneſs: and by this Contrivance, if you are willing to make an handſome Building, and to have a noble Room over the Green-houſe, you may extend the Room over the Tool-houſe, and carry up the Stair-caſe in the Back, ſo as not to be ſeen in the Green-houſe; and hereby you may have a Room twenty-five or thirty Feet in Width, and of a proportionable Length: and under this Stair-caſe there ſhould be a private Door into the Green-houſe, at which the Gardener may enter in hard froſty Weather, when it will not be ſafe to open any of the Glaſſes in the Front. The Floor of the Green-houſe, which ſhould be laid either with Stone, or broad Tiles, according to the Fancy of the Owner (but if it is laid with Stone, the *Bremen* Squares are the beſt, as being porous; ſo will not detain the Moiſture),

ure), muſt be raiſ'd two Feet above the Surface of the Ground whereon the Houſe is placed; which, in dry Ground, will be ſufficient: but if the Situation be moiſt and ſpringy, and thereby ſubject to Damps, it ſhould be raiſ'd at leaſt three Feet above the Surface: and if the Whole is arched with low Brick Arches, under the Floor, it will be of great Service in preventing the Damps riſing in Winter, which are often very hurtful to the Plants, eſpecially in great Thaws, when the Air is often too cold to be admitted into the Houſe, to take off the Damps. Under the Floor, about two Feet from the Front, I would adviſe a Flue of about one Foot in Width, and two Feet deep, to be carried the whole Length of the Houſe, which may be returned along the Back-part, and be carried up in proper Funnels adjoining to the Tool houſe, by which the Smoke may paſs off. The Fireplace may be contrived at one End of the Houſe; and the Door at which the Fuel is put in, as alſo the Aſh-grate, may be contrived to open into the Tool-houſe; ſo that it may be quite hid from the Sight, and be in the Dry; and the Fuel may be laid in the ſame Place, whereby it will always be ready for Uſe.

I ſuppoſe many People will be ſurpriſed to ſee me direct the making of Flues under a Green-houſe, which have been diſuſed ſo long, and by moſt People thought of ill Conſequence; as indeed they have often proved, when under the Direction of unſkilful Managers; who have thought it neceſſary, whenever the Weather was cold, to make Fires therein. But however injurious Flues have been under ſuch Management, yet when ſkilfully managed, they are of very great Service: for tho' perhaps it may happen, that there will be no Neceſſity to make any Fires in them for two or three Years together, as, when the Winters prove mild, there will not, yet in very hard Winters they will be extremely uſeful, to keep out the Froſt; which cannot be effected any other Way, but with great Trouble and Difficulty.

Withinſide of the Windows, in Front of the Green-houſe, you ſhould have good ſtrong Shutters. which ſhould be made with Hinges, to fold back, that they may fall back quite cloſe to the Piers, that the Rays of the Sun may not be obſtructed thereby. Theſe Shutters need not to be above an Inch and an half thick, or little more; which, if made to join cloſe, will be ſufficient to keep out our common Froſt: and when the Weather is ſo cold as to endanger the freezing in the Houſe, it is but making a Fire in your Flue, which will effectually prevent it: and without this Conveniency it will be very troubleſome, as I have often ſeen, where Perſons have been obliged to nail Mats before their Windows, or to ſtuff the hollow Space between the Shutters and the Glaſs with Straw; which, when done, is commonly ſuffered to remain till the Froſt goes away; which if it ſhould continue very long, the keeping the Green-houſe cloſely ſhut up, will prove very injurious to the Plants: and as it frequently happens, that we have an Hour or two of the Sun-ſhine in the Middle of the Day, in continued Froſts, which is of great Service to Plants, when they can enjoy the Rays thereof through the Glaſſes; ſo, when there is nothing more to do than to open the Shutters, which may be performed in a very ſhort time, and as ſoon ſhut again when the Sun is clouded, the Plants may have the Benefit thereof whenever it appears: whereas, where there is ſo much Trouble to uncover, and as much to cover again, it would take up the whole Time in uncovering and ſhutting them up, and thereby the Advantage of the Sun's Influence would be loſt. Beſides, where there is ſo much Trouble required to keep out the Froſt, it will be a great Chance if it be not neglected by the Gardener: for if he be not as fond of preſerving his Plants, and as much in love with them, as his Maſter, this Labour will be thought too great by him; and if he takes the Pains to cover the Glaſſes up with Mats. *&c.* he will not care to take them away again until the Weather alters; ſo that the Plants will be ſhut up cloſe during the whole Continuance of the Froſt.

There are ſome People who commonly make uſe of Pots filled with Charcoal to ſet in their Green-houſe in very ſevere Froſts; but this is very dangerous to the Perſons who attend theſe Fires; and I have often known they have been almoſt ſuffocated therewith; and at the ſame time they are very injurious to the Plants: nor is the Trouble of attending upon theſe ſmall; and the many Hazards to which the Uſe of theſe Fires is liable, have juſtly brought them into Diſuſe with all ſkilful Perſons; and as the Contrivance of Flues, and of the Fires, are but ſmall Charges, they are much to be preferred to any other Method for warming the Air of the Houſe.

The Back-part of the Houſe ſhould be either laid over with Stucco, or plaſtered with Morter, and white-waſhed; for otherwiſe the Air in ſevere Froſt will penetrate through the Walls, eſpecially when the Froſt is attended with a ſtrong Wind; which is often the Caſe in the moſt ſevere Winters. There are ſome Perſons who are at the Expence of wainſcoting their Green-houſes; but when this is done, it is proper to plaſter the Walls with Lime and Hair behind the Wainſcot, to keep out the Cold; and when they are lined with Wainſcot, they ſhould be painted white, as ſhould the Cieling, and every Part withinſide of the Houſe: for this reflects the Rays of Light in a much greater Quantity than any other Colour, and is of ſignal Service to Plants, eſpecially in the Winter, when the Houſe is pretty much cloſed, and but a ſmall Share of Light is admitted through the Windows: for at ſuch times I have obſerved, that in ſome Green-houſes which have been painted black, or of a dark Colour, the Plants have caſt moſt of their Leaves.

Where Green-houſes are built in ſuch Places as will not admit of Rooms over them; or the Perſon is unwilling to be at the Expence of ſuch Buildings, there muſt be Care taken to keep out the Froſt from entering through the Roof. To prevent which, it will be very proper to have a Thickneſs of Reeds, Heath, or Furz, laid between the Cieling and the Tiles: in the doing of which there muſt be Care taken in framing the Joiſts, ſo as to ſupport theſe, that their Weight may not lie upon the Cieling-joiſts, and endanger it: for theſe ſhould be laid a Foot thick at leaſt, and as ſmooth as poſſible, and faſtened down well with Laths, to prevent their riſing; and then covered over with a Coat of Lime and Hair, which will keep out the Air, and alſo prevent Mice, and other Vermin, from harbouring in them; which, if left uncovered, they would certainly do. For want of this Precaution, there are many Green-houſes built, which will not keep out the Froſt in hard Winters; and this is many times attributed to the Glaſſes in Front admitting the Cold, when the Fault is in the Roof: for where there is only the Covering either of Tiles or Slates, and the Cieling, every ſevere Froſt will penetrate through them.

In this Green-houſe you ſhould have Truſſels, which may be moved out and into the Houſe; upon which you ſhould fix Rows of Planks, ſo as to place the Pots or Tubs of Plants in regular Rows one above another, whereby the Heads of the Plants may be ſo ſituated as not to interfere with each other. The loweſt Row of Plants, which ſhould be the forwardeſt towards the Windows, ſhould be placed about four Feet therefrom, that there may be a convenient Breadth left next the Glaſſes to walk in Front: and the Rows of Plants ſhould riſe gradually from the firſt, in ſuch a manner, that the Heads of the ſecond Row ſhould be intirely advanced above the firſt, the Stems only being hid thereby: and at the Backſide of the Houſe there ſhould be allowed a Space of at leaſt five Feet, for the Conveniency of watering the Plants; as alſo to admit of a Current of Air round them, that the Damps, occaſioned by the Perſpiration of the Plants, may be the better diſſipated; which, by being pent in too cloſely, often occaſions a Mouldineſs upon the tender Shoots and Leaves; and when the Houſe is cloſe ſhut up, this ſtagnating rancid Vapour is often very deſtructive to the Plants: for which Reaſon alſo you ſhould never croud them too cloſe to each other; nor ſhould you ever place Sedums, Euphorbiums, Torch-thiſtles, and other tender ſucculent Plants, amongſt Oranges, Myrtles, and other ever-green Trees; for, by an Experiment which I made *Anno* 1729. I found that a Sedum, placed in a Green-houſe among ſuch Trees, almoſt daily increaſed its Weight, although there was no Water given to it the whole time: which Increaſe of Weight was owing to the Moiſture imbibed from the Air, which, being replete with the rancid Vapours perſpired from the other Plants, occaſioned the Leaves to grow pale, and in a ſhort time they decayed, and dropped off: which I have often obſerved has been the Caſe with many other ſucculent Plants, when placed in thoſe Houſes which were filled with many Sorts of ever-green Trees, that required to be frequently watered.

Therefore, to avoid the Inconvenience which attends the placing of Plants of very different Natures in the ſame Houſe, it will be very proper to have two Wings added to the main Green-houſe: which, if placed in the manner expreſſed in the annexed Plan, will greatly add to the Beauty of the Building, and alſo collect a greater Share of Heat. In this Plan the Green-houſe is placed exactly fronting the South; and one of the Wings faces the South-eaſt, and the other the South-weſt: ſo that from the time of the Sun's firſt Appearance upon any Part of the Building, until it goes off at Night, it is conſtantly reflected from one Part to the other; and the cold Winds are alſo kept off from the Front of the main Green-houſe hereby: and in the Area of this Place you may contrive to place many of the moſt tender Exotic Plants, which will bear to be expoſed in the Summer-ſeaſon: and in the Spring, before the Weather will permit you to ſet out the Plants, the Beds and Borders of this Area may be full of Anemonies, Ranunculus's, early Tulips, *&c.* which will be paſt flowering, and the Roots fit to take out of the Ground, by the time you carry out the Plants; which will render this Place very agreeable during the Spring-ſeaſon that the Flowers are blown; and here you may walk and divert yourſelf in a fine Day, when, perhaps, the Air in moſt other Parts of the Garden will be too cold for Perſons not much uſed thereto, to take Pleaſure in being out of the Houſe.

In the Centre of this Area may be contrived a ſmall Baſon for Water, which will be very convenient for watering of Plants, and add much to the Beauty of the Place: beſides, the Water, being thus ſituated, will be ſoftened by the Heat which will be reflected from the Glaſſes upon it; whereby it will be rendered much better than raw cold Water for theſe tender Plants.

The two Wings of the Building ſhould be contrived ſo as to maintain Plants of different Degrees of Hardineſs; which muſt be effected by the Situation and Extent of the Fire-place, and the Manner of conducting the Flues; a particular Account of which will be exhibited under the Article of *Stoves*. But I would here obſerve, that the Wing facing the South-eaſt ſhould always be preferred for the warmeſt Stove; its Situation being ſuch, as that the Sun, upon its firſt Appearance in the Morning, ſhines directly upon the Glaſſes; which is of great Service in warming the Air of the Houſe, and adding Life to the Plants, after having been ſhut up during the long Nights in the Winter-ſeaſon. Theſe Wings, being, in the Draught annexed, allowed ſixty Feet in Length, may be divided in the Middle by Partitions of Glaſs, with Glaſs-doors to paſs from one to the other. To each of theſe there ſhould be a Fire-place, with Flues carried up againſt the Back-wall, through which the Smoke ſhould be made to paſs, as many times the Length of the Houſe, as the Height will admit of the Number of Flues: for the longer the Smoke is in paſſing, the more Heat will be given to the Houſe, with a leſs Quantity of Fuel: which is an Article worth Conſideration, eſpecially where Fuel is dear. By this Contrivance, you may keep ſuch Plants as require the ſame Degree of Heat in one Part of the Houſe, and thoſe which will thrive in a much leſs Warmth in the other Part; but this will be more fully explained under the Article of *Stoves*.

The other Wing of the Houſe, facing the South-weſt, may alſo be divided in the ſame manner, and Flues carried through both Parts, which may be uſed according to the Seaſons, or the particular Sorts of Plants which are placed therein: ſo that here will be four Diviſions in the Wings, each of which may be kept up to a different Degree of Warmth; which, together with the Green-houſe, will be ſufficient to maintain Plants from all the ſeveral Countries of the World: and without having theſe ſeveral Degrees of Warmth, it will be impoſſible to preſerve the various Kinds of Plants from the ſeveral Parts of *Africa* and *America*, which are annually introduced into the *Engliſh* Gardens: for when Plants from very different Countries are placed in the ſame Houſe, ſome are deſtroyed for want of Heat, while others are forced and ſpoiled by too much of it; and this is often the Caſe in many Places, where there are large Collections of Plants.

In the building theſe Wings, if there are not Sheds running behind them, their whole Length, the Walls ſhould be two Bricks and an half thick; and if they are more, it will be better; becauſe, where the Walls are thin, and expoſed to the open Air, the Cold will penetrate them; and when the Fires are made, the Heat will come out through the Walls; ſo that it will require a larger Quantity of Fuel, to maintain a proper Temperature of Warmth in the Houſe. The Back-part of theſe Houſes, having ſloping Roofs, which are covered either with Tiles or Slates, ſhould alſo be lined with Reeds, *&c.* under the Covering, as is before directed for the Green-houſe; which will keep out the cold Air, and ſave a great Expence of Fuel; for the cloſer and better theſe Houſes are built, and the Glaſſes of the Slope, as alſo in Front, well guarded by Shutters or Reeds in hard Froſt, the leſs Fuel will be required to warm the Houſes; ſo that the firſt Expence in building theſe Houſes properly, will be the cheapeſt, when the after Expence of Fires is taken into Conſideration.

The ſloping Glaſſes of theſe Houſes ſhould be made to ſlide, and take off; ſo that they may be drawn down more or leſs, in warm Weather, to admit Air to the Plants; and the upright Glaſſes in Front may be ſo contrived, as that every other may open as Doors upon Hinges; and the alternate Glaſſes may be divided into two: the Upper-part of each ſhould be contrived ſo as to be drawn down like Saſhes; ſo that either of theſe may be uſed to admit Air, in a greater or leſs Quantity, according as there may be Occaſion.

But, beſides the Conſervatories here mentioned, it will be proper to have a deep Hot-bed-frame, ſuch as is commonly uſed to raiſe large Annuals in the Spring; into which may be ſet Pots of ſuch Plants as come from *Carolina*, *Virginia*, &c. while the Plants are too ſmall to plant in the open Air; as alſo many other Sorts from *Spain*, &c. which require only to be ſcreened from the Violence of Froſts, and ſhould have as much free Air as poſſible in mild Weather; which can be no better effected than in one of theſe Frames, where the Glaſſes may be taken off every Day when the Weather will permit, and put on every Night; and in hard Froſts the Glaſſes may be covered with Mats, Straw, Peas-haulm, or the like, ſo as to prevent the Froſt from entering the Pots to freeze the Roots of the Plants, which is what will, many times, utterly deſtroy them; though a ſlight Froſt pinching the Leaves or Shoots very ſeldom does them much Harm: if theſe are ſunk a Foot or more below the Surface of the Ground, they will be the better, provided the Ground is dry; otherwiſe they muſt be wholly above-ground: the Sides of this Frame ſhould be built with Brick, with a Curb of Wood laid round on the Top of the Wall, into which the Gutters, on which the Glaſſes ſlide, may be laid: the back Wall of this Frame may be four Feet high, and the Front one Foot and an half; the Width about ſix Feet, and the Length in proportion to the Number of Plants.

GREWIA.

This Genus of Plants was conſtituted by Dr. *Linnæus*, who gave it this Name, in Honour to Dr. *Grew*, F. R. S. who publiſhed a curious Book of the Anatomy of Plants.

The *Characters* are;

The Empalement of the Flower is compoſed of five thick ſpear-ſhaped Leaves, which are coloured within: the Flower has five Leaves of the ſame Shape with thoſe of the Empalement; but are ſmaller: in the Centre of the

Flower is ſituated the Pointal, ſhaped like a Column, having five Angles or Borders; and is attended by many Stamina; *which are inſerted into the Column, at their Baſe, and are ſtretched out to the Length of the Petals: the Pointal afterward changes to a ſquare Fruit, having four Cells, each containing a roundiſh Seed.*

We have but one *Species* of this Plant in the *Engliſh* Gardens;

GREWIA *corollis acutis. Lin. Hort. Cliff.* Grewia with pointed Flower-leaves.

This Plant has been long preſerved in many curious Gardens, both in *England* and *Holland*; and is figured by Dr. *Plukenet*, by the Title of *Ulmifolia arbor Africana baccifera, floribus purpureis*; but by Dr. *Boerhaave* it was ſuppoſed to be one of Father *Plumier*'s *American* Plants, intituled *Guidonia ulmi foliis, flore roſeo:* but the Characters of this do not at all agree with thoſe of the *Guidonia*; that particular Species of the Genus being in the Royal Garden at *Paris*, which is extremely different from this: we have no *Engliſh* Name for it.

This will grow to the Height of ten or twelve Feet, and has a Stem and Branches very like thoſe of the ſmall-leav'd Elm; the Bark being ſmooth, and of the ſame Colour as that of Elm when young: the Leaves are alſo very like thoſe of the Elm, and fall off in Autumn: the Flowers are produced ſingly, along the young Branches, from the Wings of the Leaves, which are of a bright-purple Colour: theſe appear toward the End of *July*, and continue in *Auguſt*, and the Beginning of *September*; but are never ſucceeded by Fruit, in this Country.

This may be propagated from Cuttings or Layers: the Cuttings ſhould be taken off, and planted in *March*, before the Buds begin to ſwell; for they do not ſucceed well after: they ſhould be planted in ſmall Pots filled with loamy Earth; and the Pots ſhould be plunged into a moderate Hot-bed of Tanners Bark, where, if they are duly watered, and in the Middle of the Day ſhaded from the Sun, they will have taken good Root in about two Months; and may then be gradually inured to bear the open Air; into which they ſhould be removed in *June*, and placed in a ſheltered Situation, where they may remain till Autumn, when they muſt be removed into the Green-houſe: the beſt time to lay down the Layers of this Plant is in the Spring, before the Buds come out; and theſe will be rooted by the ſame time the following Year, when they may be cut off from the old Plants, and planted each into a ſeparate Pot filled with a ſoft loamy Soil.

The beſt time to remove or tranſplant this Plant is, either in the Spring, juſt before the Buds begin to ſwell, or in Autumn, when the Leaves begin to drop; for in Summer, when the Plants are in full Leaf, it will be very improper to diſturb them.

In Winter theſe Plants ſhould be placed in the Green-houſe; for they are too tender to live abroad in *England:* but they ſhould have as much free Air as poſſible in mild Weather; for they only require to be protected from Froſt: and after their Leaves are fallen, they will require very moderate Watering; but in Summer they ſhould be conſtantly watered, and placed in a ſheltered Situation, with other hardy Green-houſe Plants, where they will add to the Variety.

GRONOVIA.

The Name of this Genus was

given by the late Dr. *Houſtoun*, in Honour to Dr. *Gronovius*, a learned Botaniſt at *Leyden*.

The *Characters* are;

The Empalement is of one Leaf, which is cut into five Parts toward the Top: the Flower hath five ſmall Petals, which are placed circularly, and expand in form of a Roſe; and ſit upon the Embryo; which afterward becomes one naked winged Seed.

We have but one *Species* of this Genus; *viz.*

GRONOVIA *ſcandens lappacea, pampinea fronde. Houſt.* Climbing burry Gronovia, with Tendrils like the Vine.

This Plant was diſcovered by the late Dr. *Houſtoun* at *La Vera Cruz*; from whence he ſent the Seeds to *Europe*, which have ſucceeded in many Gardens. It is an annual Plant, which ſends forth many trailing Branches, like thoſe of the Cucumber, which are cloſely ſet with broad green Leaves, in Shape like thoſe of the Vine; but they are cloſely covered with ſmall Spines on both Sides, which ſting like the Nettle; the Branches have many Tendrils or Claſpers, by which they faſten themſelves to whatever Plants they grow near; and will riſe to the Height of ſix or eight Feet: the Flowers are ſmall, and of a greeniſh-yellow Colour; ſo make no great Appearance.

This, being a very tender Plant, muſt be raiſed on an Hot-bed early in the Spring, and afterward placed in the Bark-ſtove, and treated in the ſame Way as the *Momordica*; with which Management it will produce ripe Seeds: but this, having neither Uſe nor Beauty, is rarely cultivated but in Botanic Gardens, for the ſake of Variety.

GROSSULARIA, The Gooſeberry-tree.

The *Characters* are;

The Leaves are laciniated, or jagged: the whole Plant is ſet with Prickles: the Fruit grows ſparſedly upon the Tree, having, for the moſt part, but one Fruit upon a Footſtalk, which is of an oval or globular Figure, containing many ſmall Seeds ſurrounded by a pulpy Subſtance.

The *Species* are;

1. GROSSULARIA *ſimplici acino, vel ſpinoſa ſylveſtris. C. B. P.* The common Gooſberry.
2. GROSSULARIA *ſpinoſa ſativa. C. B. P.* The large manured Gooſeberry.
3. GROSSULARIA *fructu obſcure purpuraſcente. Cluſ.* The red hairy Gooſberry.
4. GROSSULARIA, *ſive Uva criſpa alba maxima rotunda. Hort. Ed.* The large white *Dutch* Gooſberry.
5. GROSSULARIA *maxima ſubflava oblonga. Hort. Ed.* The large Amber Gooſberry.
6. GROSSULARIA *fructu rotundo maximo vireſcente.* The large green Gooſberry.
7. GROSSULARIA *fructu rubro majore. Boerh. Ind.* The large red Gooſberry.
8. GROSSULARIA *ſpinoſa ſativa, foliis flaveſcentibus.* The yellow-leav'd Gooſberry.
9. GROSSULARIA *ſpinoſa ſativa, foliis ex luteo variegatis.* The ſtrip'd-leav'd Gooſberry.

There are ſeveral other Varieties of this Fruit, which have been obtained from Seeds in divers Parts of *England*, which differ either in the Shape or Colour of the Berries: but as theſe are only ſeminal Variations, it is needleſs, in this Place, to enumerate them, eſpecially ſince the Number of theſe will be increaſed continually from Seeds.

Theſe are propagated either by Suckers taken from the old Plants, or by Cuttings; the latter of which I prefer to the former, becauſe thoſe Plants which are produced from Suckers are always more diſpoſed to ſhoot out a greater Number of Suckers from their Roots, than ſuch as are raiſed from Cuttings, which generally form much better Roots.

The beſt Seaſon for planting theſe Cuttings is in Autumn, juſt before their Leaves begin to fall; obſerving always to take the handſomeſt Shoots, and from ſuch Branches as generally produce the greateſt Quantity of Fruit; for if you take thoſe which are produced from the Stem of the old Plants (which are commonly very luxuriant), they will not be near ſo fruitful as thoſe taken from bearing Branches: theſe Cuttings ſhould be about ſix or eight Inches long, and muſt be planted in a Border of light Earth, expoſed to the morning Sun, about ſix Inches deep, obſerving to water them gently, when the Weather proves dry, to facilitate their taking Root; and in the Summer, when they have put out, you ſhould rub off all the under Shoots, leaving only the uppermoſt or ſtrongeſt, which ſhould be trained upright, to form a regular Stem. In *October* following, theſe Plants will be fit to remove; at which time you ſhould prepare an open Spot of freſh Earth, which ſhould be well dug, and cleanſed from all noxious Weeds, Roots, *&c.* and being levelled, you ſhould proceed to take up your Plants, trimming their Roots, and cutting off all lateral Branches; then plant them at three Feet Diſtance Row from Row, and one Foot aſunder in the Rows, obſerving to place ſome ſhort Sticks to the Plants, in order to train their Stems upright and regular. In this Place they may remain one Year; being careful to keep them clear from Weeds; as alſo to trim off all lateral Shoots which are produced below the Head of the Plant, ſo that the Stem may be clear about a Foot in Height above the Surface of the Earth, which will be full enough: and as the Branches are produced commonly very irregular in the Head, you muſt cut out ſuch of them as croſs each other, or thin them where they are too cloſe; whereby the Head of the Plant will be open, and capable of admitting the Air freely into the Middle, which is of great Uſe to all Kinds of Fruits.

After theſe Plants have remained in this Nurſery one Year, they will be fit to tranſplant to the Places where they are deſigned to remain; for it is not ſo well to let them grow in the Nurſeries too large, which will occaſion their Roots to be woody, whereby the removing of them will not only hazard the Growth of the Plants; but ſuch of them as may take very well, will remain ſtinted for two or three Years, before they will be able to recover their Check. The Soil in which theſe Plants thrive to the greateſt Advantage, is a rich light ſandy Earth; though they will do very well upon moiſt Soils, which are not too ſtrong or moiſt, and in all Situations: but where the Fruit is cultivated, in order to procure it in the greateſt Perfection, they ſhould never be planted in the Shade of other Trees, but muſt have a free open Expoſure: the Diſtance they ought to be planted is eight Feet Row from Row, and ſix Feet aſunder in the Rows: the beſt Seaſon for tranſplanting them is in *October*, when their Leaves begin to decay; obſerving, as was before directed, to prune their Roots, and trim off all lateral Shoots, or ſuch as croſs each other, ſhortening all long Branches, ſo as to make the Head regular.

In the pruning of theſe Shrubs, moſt People make uſe of Garden-ſheers, obſerving only to cut the Head round, as is practiſed for Ever-greens, &c. whereby the Branches become ſo much crouded, that what Fruit is produced, never grows to half the Size as it would do, were the Branches thinned, and pruned according to Art; which ſhould always be done with a Pruning-knife, ſhortening the ſtrong Shoots to about ten Inches, and cutting out all thoſe which grow irregular, and thinning the fruit-bearing Branches where they are too thick; obſerving always to cut behind a Leaf-bud: with this Management your Fruit will be near twice as large as thoſe which are produced upon ſuch Buſhes as are not thus pruned, and the Shrubs will continue in Vigour much longer: but you muſt obſerve to keep the Ground clear from Weeds, and dig it at leaſt once a Year; and every other Year you ſhould beſtow a little rotten Dung upon it, which will greatly improve the Fruit.

It is a common Practice with the Gardeners near *London*, who have great Quantities of theſe Buſhes, in order to ſupply the Markets, to prune them ſoon after *Michaelmas*, and then to dig up the Ground between the Rows, and plant it with Coleworts for Spring Uſe, whereby their Ground is employed all the Winter, without prejudicing the Gooſberries; and in hard Winters theſe Coleworts often eſcape, when thoſe which are planted in an open Expoſure are all deſtroyed; and theſe are generally pulled up for Uſe in *February* or *March*, ſo that the Ground is clear before the Gooſberries come out in the Spring; which is a Piece of Huſbandry well worth practiſing where Ground is dear, or where Perſons are confined for room.

GROVES are the greateſt Ornaments to a Garden; nor can a Garden be complete which has not one or more of theſe. In ſmall Gardens there is ſcarce room to admit of Groves of any Extent; yet in theſe there ſhould be at leaſt one contrived, which ſhould be as large as the Ground will allow it: and where theſe are ſmall, there is more Skill required in the Diſpoſition, to give them the Appearance of being larger than they really are.

Groves have been in all Ages held in great Veneration: the antient *Romans* had a Sort of Groves near ſeveral of their Temples, which were conſecrated to ſome God, and were called *Luci* by *Antiphraſis*, *a non lucendo*, as being ſhady and dark; and theſe were dedicated to holy Uſes; being Places of Solitude and Retirement, and were never to be violated with the Ax.

Theſe Groves are not only great Ornaments to Gardens, but are alſo the greateſt Relief againſt the violent Heats of the Sun, affording Shade to walk under, in the hotteſt Part of the Day, when the other Parts of the Garden are uſeleſs; ſo that every Garden is defective which has not Shade.

Groves are of two Sorts; *viz.* open and cloſe Groves: Open Groves are ſuch as have large ſhady Trees, which ſtand at ſuch Diſtances, as that their Branches may approach ſo near each other, as to prevent the Rays of the Sun from penetrating through them: but as ſuch Trees are a long time in growing to a proper Size for affording a Shade; ſo where new Groves are planted, the Trees muſt be placed cloſer together, in order to have Shade as ſoon as poſſible: but in planting of theſe Groves, it is much the beſt Way to diſpoſe all the Trees irregularly, which will give them a greater Magnificence, and alſo form a Shade ſooner, than when the Trees are planted in Lines; for when the Sun ſhines between the Rows of Trees, as it muſt do ſome Part of the Day in Summer, the Walks between them will be expoſed to the Heat, at ſuch times, until the Branches of theſe Trees meet; whereas, in the irregular Plantations, the Trees intervene, and obſtruct the direct Rays of the Sun.

When a Perſon, who is to lay out a Garden, is ſo happy as to meet with large full-grown Trees upon the Spot, they ſhould remain inviolate, if poſſible; for it will be better to put up with many Inconveniencies, than to deſtroy theſe, which will require an Age to retrieve; ſo that nothing but that of offending the Habitation, by being ſo near as to occaſion great Damps, ſhould tempt the cutting of them down.

Moſt of the Groves which have been planted either in *England*, or thoſe celebrated Gardens in *France*, are only a few regular Lines of Trees; many of which are Avenues to the Habitation, or lead to ſome Building, or other Object: but theſe do not appear ſo grand, as thoſe which have been made in Woods, where the Trees have grown accidentally, and at irregular Diſtances; where the Trees have large ſpreading Heads, and are left, at ſuch Diſtance as to permit the Graſs to grow under them, then they afford the greateſt Pleaſure; for nothing is more noble, than fine ſpreading Trees, with large Stems, growing through Graſs, eſpecially if the Graſs is well kept, and has a good Verdure; beſides, moſt of theſe planted Groves have generally a Gravel-walk, made in a ſtrait Line between them; which greatly offends the Sight of Perſons who have true Taſte: therefore whenever a Gravel-walk is abſolutely neceſſary to be carried through theſe Groves, it will be much better to twiſt it about, according as the Trees naturally ſtand, than to attempt Regularity: but dry Walks under large Trees are not ſo uſeful, as in open Places; becauſe the dropping of the Trees will render theſe Walks uſeleſs, after Rain, for a conſiderable time.

Cloſe Groves have frequently large Trees ſtanding in them; but the Ground is filled under theſe with Shrubs, or Underwood; ſo that the Walks which are made in them are private, and ſcreened from Winds; whereby they are rendered agreeable for walking, at ſuch times when the Air is too violent or cold for walking in the more expoſed Parts of the Garden.

Theſe are often contrived ſo as to bound the open Groves, and frequently to hide the Walls, or other Incloſures of the Garden: and when they are properly laid out, with dry Walks winding through them, and on the Sides of theſe ſweet-ſmelling Shrubs and Flowers irregularly planted, they have a charming Effect: for here a Perſon may walk in private ſheltered from the Inclemency of cold or violent Winds; and enjoy the greateſt Sweets of the vegetable Kingdom: therefore where it can be admitted, if they are continued round the whole Incloſure of the Garden, there will be a much greater Extent of Walk: and theſe Shrubs will appear the beſt Boundary, where there are not fine Proſpects to be gained.

Theſe cloſe Groves are by the *French* termed *Boſquets*, from the *Italian* Word *Boſquetto*, which ſignifies a little Wood: and in moſt of the *French* Gardens there are many of them planted; but theſe are reduced to regular Figures, as Ovals, Triangles, Squares, and Stars: but theſe have neither the Beauty or Uſe which thoſe have that are made irregularly, and whoſe Walks are not ſhut up on each Side by Hedges, which prevents the Eye from ſeeing the Quarters; and theſe want the Fragrancy of the Shrubs and Flowers, which are the great Delight of theſe private Walks; add to this, the keeping of the Hedges in good Order is attended with a great Expence; which is a capital Thing to be conſidered in the making of Gardens.

GUAIABARA, Sea ſide Grape, *vulgo*.

The *Characters* are;

It hath a Flower conſiſting of ſix Leaves, which expand in form of a Roſe: in the Centre ariſes the Pointal, which afterward becomes a pulpy Fruit, incloſing one roundiſh Stone terminating in a Point.

The *Species* are;

1. Guaiabara *alia racemoſa, foliis oblongis. Plum. Manuſ.* Sea-ſide Grape, with oblong Leaves.

2. Guaiabara *foliis rotundioribus. Houſt.* The common Sea ſide Grape.

3. Guaiabara *alia racemoſa, foliis latiſſimis. Houſt.* Sea ſide Grape, with very broad Leaves.

4. Guaiabara *foliis minoribus & longioribus, fructu racemoſo minimo atro-purpureo. Houſt.* Sea ſide Grape, with ſmaller and longer Leaves, and the leaſt dark-purple Fruit growing in Bunches, commonly called Chigery Grape.

The ſecond Sort is very common in *Jamaica*, and all the *Caribbee* Iſlands; where it grows on the ſandy Shores, from whence it had the Name of Sea-ſide Grapes, the Fruit growing in a long ſlender Bunch. This Fruit is commonly ſold in the Markets in *Barbados*, where it is much eſteemed.

The firſt Sort is common at *Carthagena* in *New Spain*, from whence I received the Seeds; which were collected by the late Dr. *William Houſtoun*.

The third Sort was alſo diſcovered by the ſame Gentleman at *La Vera Cruz*; who ſent the Seeds into *England*, from which ſeveral Plants were raiſed. Theſe two Sorts alſo grow on the ſandy Shores near the Sea.

Theſe Shrubs uſually grow about ten or twelve Feet high, and have ſeveral Trunks ariſing from the ſame Root, ſo that they appear like large Buſhes. The Fruit comes out from the Wings of the Leaves in long ſlender Bunches, which are about the Size of an ordinary Raiſin in the ſecond Sort: but the firſt and third Sorts produce very ſmall Fruit, which are ſeldom gathered. The ſecond Sort is figured in *Lobel's Hiſtory of Plants*, under the Title of *Populus Novi Orbis*.

All theſe Sorts are propagated by Seeds, which ſhould be ſown in ſmall Pots filled with light rich Earth, and plunged into an Hot-bed of Tanners Bark: in about a Month after which, the Plants will appear above-ground. When they are about two Inches high, they muſt be ſhaken out of the Pots, and ſeparated carefully, planting each into a ſmall Pot filled with light rich Earth, and then plunged into the Hot-bed again, obſerving to ſcreen them from the Sun every Day, until they have taken Root; after which time they ſhould have Air admitted to them every Day, in proportion to the Warmth of the Seaſon, and the Heat of the Bed in which they are placed; they muſt alſo be frequently watered in hot Weather: in this Bed they may remain till *Michaelmas*; at which time they ſhould be removed into the Stove, and plunged into the Tan. During the Winter-ſeaſon, they muſt be kept very warm, and frequently refreſhed with Water; but it muſt not be given to them in large Quantities; but in Summer they ſhould have freſh Air admitted to them in warm Weather, and watered more plentifully: but they muſt conſtantly remain in the Stove; for they are too tender to live in the open Air in this Country in the warmeſt Seaſon. Theſe Plants, having thick, ſtrong, green Leaves, make an agreeable Appearance in the Stoves; and it may be expected to ſee the Fruit brought to Perfection in ſome of the Stoves which have been lately erected.

GUAJACANA. *Vide* Dioſpyros.

GUAIACUM, Lignum Vitæ, *vulgo*.

The *Characters* are;

It hath pinnated Leaves: the Flower conſiſts of ſeveral Petals, which are placed orbicularly, and expand in form of a Roſe: the Pointal of the Flower, which ariſes from the Centre of the Calyx, *becomes a fleſhy, roundiſh, ſtony Fruit, or the ſtony Seeds are ſurrounded with a thin Pulp.*

The *Species* are;

1. Guaiacum *flore cæruleo, fructu ſubrotundo. Plum.* Lignum Vitæ, or Wood of Life, with a blue Flower, and roundiſh Fruit.

2. Guaiacum *flore cæruleo fimbriato, fructu tetragono. Plum.* Lignum Vitæ, with a blue fringed Flower, and a four-corner'd Fruit.

Theſe two Plants are Natives of the hotteſt Parts of the *Weſt-Indies*, and are with great Difficulty tranſplanted into *England*; for their Seeds ſeldom riſe with us, unleſs they are brought very freſh, and are ſown ſoon after they arrive: I have ſome young Plants in the Phyſic-garden, which were raiſed from Seeds, *Anno* 1726. and have come on very well, tho' they are naturally Plants of very ſlow Growth.

Theſe Plants may be brought over from *America* in any of the Summer-months, which is the ſureſt Method to obtain them, their Seeds being very difficult to grow: but great Care ſhould be taken to tranſplant them into a Tub or Box of Earth at leaſt a Month before they are put on board the Ship, that they may be ſettled in the Earth, and Charge given to the Sailors not to over water them in their Paſſage; which is what hath deſtroyed more Plants ſent from abroad, than either the Cold, or any other Accident or Management whatever.

When the Plants arrive, they ſhould be immediately taken out of the Tubs, preſerving ſome Earth about their Roots, and planted into Pots filled with freſh rich Earth, and plunged into an Hot-bed of Tanners Bark, to facilitate their making freſh Roots, that they may be enabled to live thro' the Winter; for if they are not well rooted in the Earth before the cold Weather comes on, it will be difficult to preſerve them.

In *October* they ſhould be removed into a warm Stove, where the Thermometer ſhould be kept up to twenty Degrees above Temperate, as mark'd on the Botanical Thermometers; and during the Winter-ſeaſon they ſhould be often refreſhed with Water: but it ſhould be given them very cautiouſly; for too much Moiſture is very hurtful to theſe Plants. You ſhould alſo carefully waſh their Leaves, from time to time, to cleanſe them from Filth, which is very ſubject to lodge upon the Surface thereof: and in Summer they ſhould have a good Share of freſh Air, by opening the Glaſſes of the Stove; but they ſhould never be wholly expoſed to the open Air, even in the hotteſt Seaſon, unleſs for a ſhort time, in a gentle warm Shower of Rain, which will waſh the Leaves, and gently refreſh them.

The Wood of theſe Trees is ſo hard, as to break the Tools in felling them; ſo that it is ſeldom cut down for Fire-wood, being very difficult to burn.

But this Wood is of great Uſe to the Sugar-planters in *America*, for making of Wheels, Cogs for the Mills, *&c.* and it is brought to *Europe*, where Bowls, and many Utenſils, are made of this Wood.

GUAJAVA, The Guava.

The *Characters* are;

The Flowers, for the moſt part, conſiſt of five Leaves, which are produced in a circular Order, and expand in form of a Roſe, having many Stamina, *or Threads, ſurrounding the Ovary: the Ovary is of a long tubulous Figure, which becomes a fleſhy Fruit, crowned on the Top, and containing many ſmall hard Seeds.*

The *Species* are;

1. Guajava *alba dulcis. H. L.* The white Guava.

2. Guajava *rubra acida, fructu rotundiori. H. L.* The red Guava.

3. Guajava *alba, fructu parvo odorato.* The ſmall white ſweet-ſcented Guava.

The firſt and ſecond Sorts are frequently cultivated in *America*, for the Fruit; which are reckoned among the good Fruits of the Iſlands: theſe produce Fruit about the Size and Shape of Medlars: the Fleſh of the firſt Sort is red, and that of the ſecond white; the latter being ſweeter than the former, which is auſtere and aſtringent, ſomewhat like the Pomgranate: but whether theſe are ſpecifically different, or both ariſe from the ſame Seeds, I cannot determine.

The third Sort is found wild in all the Iſlands of the *Weſt-Indies*, where it is frequently intermixed with the two former: the Fruit of this Sort is oval, and about the Size of a large Gooſberry, of a dirty-white Colour; and, when ripe, ſmells exceeding ſweet: a ſingle Fruit of this will perfume the Air of a large Stove; which is what I never have obſerved in either of the other Sorts, which have ripened their Fruit often in *England*.

Theſe Trees grow to the Height of twenty Feet, or more, in the *Weſt-Indies*, and have Trunks as thick as a Man's Thigh: but with us in *England* they are preſerved in warm Stoves, and are rarely ſeen above eight or ten Feet high: tho' there are ſeveral Trees which have produced Fruit in *England*.

Theſe Plants are propagated by ſowing their Seeds in an Hot-bed in the Spring; and if the Seeds are freſh, they will come up very ſoon: and the Plants will grow pretty faſt; ſo that when they are about two Inches high, they ſhould each of them be tranſplanted into a ſingle Halfpeny Pot filled with light rich Earth, and plunged into a freſh Hot-bed, in order to bring them forward; obſerving to give them Air, in proportion to the Warmth of the Weather;

ther; and in Summer-time they will require to be frequently watered; and in the Beginning of *July* you muſt let them have a plentiful Share of Air, in order to harden them before Winter; for if you continue forcing them quite thro' the Summer, you will get them to be very large in one Seaſon; but then they'll be ſo tender, that it will be difficult to preſerve them in Winter.

At the Latter end of *Auguſt*, or Beginning of *September*, you ſhould remove the Pots into the Stove, where they ſhould be placed in a moderate Situation, *i. e.* not too near the Fire, nor at too great a Diſtance therefrom: the temperate Heat, as mark'd upon the Botanical Thermometers, agreeing better with them than a greater Degree. During the Winter-ſeaſon they muſt be often refreſhed with Water, eſpecially if they are placed upon Shelves in the Stove; but if they are plunged into Tanners Bark, they will not require it ſo often; nor muſt they have too much given at a time. You ſhould alſo frequently waſh their Leaves with a Cloth in Winter, in order to cleanſe them from Duſt, and other Filth, which have been collected upon the Surfaces of the Leaves, during their being in the Houſe; as alſo from Vermin, which are very ſubject to infeſt theſe Plants. In Summer you may expoſe them to the Air, by removing or opening the Glaſſes in the Front of the Stove; and in very warm Weather they may be placed abroad in a warm Situation; but they ſhould not remain long abroad, eſpecially if the Seaſon is cold: for when they are treated too hardily, they will never produce either Fruit or Flowers; whereas, when they are rightly managed, they will flower the third Seaſon after their being ſown.

Theſe Trees are planted everywhere in the *Caribbee Iſlands* for their Uſefulneſs; though the uſual Manner of their Cultivation is by being eaten: the Seeds, paſſing intire thro' the Body, are voided in the Excrements; ſo that where-ever the Negroes dung, there will never want a Supply of theſe Trees; which is often ſo great, as to become troubleſome in their Plantations and Savanna's.

"The Fruit (ſays Sir *Hans Sloane*) " is accounted extremely pleaſant, " delicious, and wholſome; and may " very deſervedly take the firſt Place " among the *Weſt-Indian* Fruits, if " eaten when thoroughly ripe. They " have (continues he) only this Inconvenience, that being very " aſtringent, they ſtop up the Belly, " if eaten in great Quantities; and " the Seeds ſometimes ſticking to " the hard Excrement, in coming " thro' the Inteſtines, eſpecially the " *Rectum*, by their irregular ſharp " Angles, will occaſion very great " Pain there, and very often bring " a Flux of Blood."

GUANABANUS, The Cuſtard-apple.

The *Characters* are;

The Empalement of the Flower conſiſts of three ſmall pointed Leaves: the Flowers of ſome Sorts have only three, but in others ſix Petals; in the latter, three are alternately leſs than the other: from the Empalement ariſes the Pointal, which afterward becomes an oval or round fleſhy ſoft Fruit, incloſing ſeveral oblong ſmooth hard Seeds.

The *Species* are;

1. Guanabanus *fructu aureo, & molliter aculeato. Plum. Nov. Gen.* The Cuſtard apple.

2. Guanabanus *fructu e viridi luteſcente molliter aculeato. Plum. Nov. Gen.* The Sour-ſop.

3. Guanabanus *paluſtris, fructu lævi viridi. Plum. Nov. Gen.* The Water-apple.

4. Guanabanus *foliis odoratis, fructu ſubrotundo ſquamoſo.* The Sweet-ſop.

5. Guanabanus *Perſeæ folio, flore intus albo, exterius viriſcente, fructu nigricante ſquamato, vulgo Cherimolia. Feuille obſ.* The Cherimolia or Cherimonias.

6. Guanabanus *fructu ſubcæruleo. Plum. Nov. Gen.* The Sweet-apple.

7. Guanabanus *fructu purpureo. Plum. Nov. Gen* The Purple-apple.

8. Guanabanus *fructu viridi lævi, pyri inverſi forma.* Water-apple with a ſmooth green inverted pear-ſhaped Fruit.

There are many more Sorts of theſe Trees in the *Eaſt* and *Weſt-Indies*, where many of the Sorts produce eſculent Fruits, ſome of which are eſteemed by the Inhabitants, and brought to their Deſſerts; but others are Food for Birds, Guana's, and other Animals. Theſe do many of them grow to the Size of our Apple-trees, eſpecially in the warmeſt Countries; but thoſe which grow in colder Countries, ſeldom riſe above eight or ten Feet high, and have more the Appearance of Shrubs than of Trees; for they frequently riſe with many Stems from the Root.

There are two Sorts of theſe Trees, which grow as far North as *Virginia*, where one is called Papaw-tree; but there they are never large Trees, and are often injured by Cold in Winter. Theſe Sorts thrive much better in *Carolina*; but whether either of theſe are the ſame as are found in the Iſlands of the *Weſt-Indies*, I cannot abſolutely determine: one of theſe Sorts will thrive in the open Air in *England*, if it is planted in a warm ſheltered Situation; but the Plants ſhould be trained up in Pots, and ſheltered in Winter, for two or three Years, until they have acquired ſome Strength; then they may be turned out of the Pots in the Spring, and planted in the full Ground, where they are to remain. This Sort has produced Flowers in the curious Garden of his Grace the Duke of *Argyll* at *Whitton* near *Hounſlow*; where it has been growing in the open Air for ſome Years. The Seeds of this Sort are frequently brought to *England* from *North America*; and many Plants have been lately raiſed in the Gardens near *London*. The Seeds of this Sort are very different in Shape, from any of thoſe which I have yet ſeen, which have been brought from the Iſlands of the *Weſt-Indies*, and the Shape of the Leaves is alſo different; and this caſts its Leaves in Autumn, whereas all the others retain their Leaves, never caſting them until the Spring, when the new Leaves come out; ſo that it may certainly be deemed a diſtinct Species. The Seeds of this Sort frequently remain a whole Year in the Ground; therefore the Earth ſhould not be diſturbed where they are ſown, if the Plants do not come up the firſt Year: but the beſt Way is, to ſow the Seeds in Pots, which may be ſheltered in Winter; and if they are plunged into a moderate Hot-bed in the Spring, the Plants will come up much ſooner than they will in the open Air; ſo will have more time to get Strength before the Winter.

The firſt Sort uſually grows to the Height of twenty-five Feet or upward, in the *Weſt-Indies*; and is well furniſhed with Branches on every Side: the Bark is ſmooth, and of an Aſh-colour: the Leaves are oblong, pointed, and have ſeveral deep tranſverſe Ribs or Veins, and are of a light-green Colour: the Fruit is of a conical Form, and as large as a Tennis-ball; of an Orange-colour, when ripe, having a ſoft ſweet yellowiſh Pulp, of the Conſiſtence of a Cuſtard, from whence this Name was given to it.

The ſecond Sort is not ſo large as the firſt; rarely riſing above twenty Feet high, and not ſo well furniſhed with Branches; the Leaves are broader than thoſe, and have a ſmooth Surface without any Furrows, and are of a ſhining-green Colour: the Fruit is large, of an oval Shape, irregular, and pointed at the Top; being of a greeniſh-yellow Colour, and full of ſmall Knobs on the Outſide: the Pulp is ſoft, white, and of a ſour and ſweet Taſte intermixed, having many oblong dark-colour'd Seeds.

The third Sort commonly grows from thirty to forty Feet in the *Weſt-Indies*. This hath oblong pointed Leaves, which have ſome ſlender Furrows, and when rubbed have a ſtrong Scent: the Fruit of this Sort is ſeldom eaten but by the Negroes: the Tree grows in moiſt Places in all the Iſlands of the *Weſt-Indies*.

The fourth Sort is a Tree of humbler Growth, ſeldom riſing more than twenty Feet high, and is well furniſh'd with Branches on every Side: the Leaves of this Sort have an agreeable Scent when rubbed: the Fruit is roundiſh and ſcaly, and when ripe turns to a purple Colour, and hath a ſweet Pulp.

The fifth Sort is much cultivated in *Peru* for the Fruit; and from thence the Seeds have been brought to *England*, and many Plants have been raiſed. This grows to be a very large Tree in the natural Country of its Growth, and is well furniſhed with Branches, which are garniſhed with Leaves of a bright green Colour, and much larger than thoſe of any of the other Sorts. The Fruit is ſhaped like an Heart, and is ſcaly on the Outſide, being of a dark-purple Colour when ripe: the Fleſh is ſoft and ſweet, has many brown Seeds intermixed: this Fruit is eſteemed by the *Peruvians* as one of their moſt delicate Sorts. This has produced Flowers in *England*, but no Fruit.

The ſixth and ſeventh Sorts grow in ſome of the *French* Iſlands, as alſo in *Cuba*, in great Plenty: theſe grow to the Height of three Feet or more: their Fruit are eſteemed by the Inhabitants of thoſe Iſlands, who frequently give them to ſick Perſons, as they reckon them very cooling and wholſome.

The eighth Sort grows plentifully in the *Bahama* Iſlands, where it ſeldom riſes to more than ten Feet high, having ſeveral Stems: the Fruit of this Sort is ſhaped like a Pear inverted, the largeſt End being at the Footſtalk. This is ſeldom eaten but by the Negroes, and is the Food of Guana's, and other Animals.

All theſe Sorts, which are Natives of the warm Parts of *America*, are too tender to live in this Country, if they are not preſerved in warm Stoves: they come up very eaſily from the Seeds which are brought from *America*, if they are freſh: but the Seeds muſt be ſown on a good Hot-bed, or in Pots of light Earth, and plunged into an Hot-bed of Tanners Bark. Theſe Seeds ſhould be ſown as ſoon as poſſible when they arrive, unleſs it is very late in Autumn, or in Winter; in which Caſe, they ſhould not be ſown till *February*; becauſe if the Seeds receive much Damp in the Winter, they will rot; and if the Plants ſhould come up at that Seaſon, it will be very difficult to preſerve them till the Spring; ſo that when theſe Seeds come to *England*, pretty early in the Spring, it is by much the beſt time; becauſe the Plants come up early, and will have time to get Strength, before the cold Weather comes on in Autumn.

If theſe Plants are kept in the Bark-ſtove, and carefully managed, they will make great Progreſs; but in warm Weather they ſhould have plenty of freſh Air admitted to them; for when the Air is excluded from them too much, they are apt to grow ſickly; when they will ſoon be attacked by Vermin, which will multiply and ſpread over the whole Surface of the Leaves, and cauſe them to decay: but if the Plants are carefully managed, their Leaves will continue green all the Winter, and make a very good Appearance in the Stove at that Seaſon.

There are ſome of theſe Plants in *England*, which are upward of twelve Feet high, and have produc'd Flowers; ſo that they may probably produce Fruit here. As theſe Plants advance in their Growth, they become more hardy, and ſhould have a greater Share of Air admitted to them, eſpecially in the Summer: but there ſhould be great Care taken, not to let them remain in the Bark-bed too long unremoved; becauſe they are very apt to root thro' the Holes of the Pots into the Tan; and then theſe Roots will be torn off, whenever the Pots are removed, and the Plants ſeldom ſurvive this; and when they do, it is generally a long time before they perfectly recover their former Vigour. Theſe Plants, when young, will require to be kept in the ſame Degree of Warmth with the *Ananas*; but as they get more Strength, they will thrive with leſs Warmth.

The *Virginia* Sort may be planted abroad, in a warm ſheltered Situation, when the Plants have acquired ſome Strength, where they will endure the Cold of our ordinary Winters very well.

GUAZUMA, Baſtard Cedar tree, *vulgo*.

The *Characters* are;

It hath a regular Flower conſiſting of five Leaves, which are hollowed like a Spoon at their Baſe; but at their Tops are divided into two Parts, like a Fork: the Flower-cup conſiſts of three Leaves, from whence ariſes the Pointal, which afterward becomes a roundiſh werted Fruit, which has five Cells incloſing many Seeds.

The *Species* are;

1. GUAZUMA *arbor ulmifolia, fructu ex purpura nigro. Plum. Nov. Gen.* The baſtard Cedar-tree, *vulgo*.

2. GUAZUMA *frutex chamædryfolia, fructu lanuginoſo, major. Plum. Nov. Gen.* Shrubby Guazuma, with a Ground-pine-leaf, and a larger woolly Fruit.

3. GUAZUMA *frutex chamædryfolia, fructu lanuginoſo, minor. Plum. Nov. Gen.* Shrubby Guazuma, with a Ground-pine-leaf, and a leſſer woolly Fruit.

The firſt Sort grows plentifully in the Low-lands in *Jamaica*, where it riſes to the Height of forty or fifty Feet, and has a large Trunk. The Timber of this Tree is cut into Staves for Caſks of all Sorts, and uſed for many other Purpoſes. The Fruit is eaten by Cattle as it falls from the Trees, and is eſteemed very good to fatten them; ſo that the Planters often leave theſe Trees ſtanding in their Savannas, when they clear them from all other Wood; becauſe, when there is a Scarcity of Graſs, and other Food, theſe Fruit are a great Support to their large Cattle.

The other two Sorts are pretty common in ſeveral Parts of the *Weſt-Indies*, where they grow about ten or twelve Feet high; but are of little Uſe to the Inhabitants.

Theſe Plants may be propagated by Seed, which ſhould be ſown early in the Spring, in ſmall Pots filled with freſh light Earth, and plunged into an Hot-bed of Tanners Bark. When the Plants are about three Inches high, they muſt be ſhaken out of the Pots, and parted carefully, planting each into a ſeparate ſmall Pot filled with freſh light Earth, and then plunged into the Hot-bed again, being careful to ſcreen them from the Heat of the Sun, until they have taken new Root. In this Bed the Plants may remain all the Summer. About *Michaelmas* the Plants muſt be removed into the Stove, and plunged into the Tan in a warm Part of it. During the Winter-ſeaſon they will not require ſo much Water as in Summer: if their Leaves ſhould contract Filth, it muſt be carefully waſhed off with a Sponge; for if it is ſuffered to remain on them, it will greatly injure the Plants. Theſe Plants being very tender, they muſt conſtantly remain in the Stoves, giving them a good Share of freſh Air in Summer; but in Winter they muſt be kept very warm, otherwiſe they will not live in this Country; but if they are carefully managed, they will thrive very well, and afford an agreeable Variety in the Stove amongſt other tender Exotic Plants of the ſame Countries.

GUIDONIA.

This Name was given to this Genus of Plants by Father *Plumier*, who diſcovered them in the *Weſt-Indies*, in Honour to two Perſons of Eminence in *France*; *viz.* Monſieur *Guido Fagon* the King's firſt Phyſician, and *Guidon Broſs*, who was Intendant of the Royal Garden at *Paris*.

The *Characters* are;

The Empalement of the Flower is of one Leaf, and is divided into five Parts: the Flower is of one Leaf, which is in form of a truncated Cone, having deep Furrows, and is indented at the Brim: from the Centre of the Empalement ariſes the Pointal, which afterward turns to an oval fleſhy Fruit, which opens in four Parts from Top to Bottom, incloſing many oblong Seeds, which are faſtened to the Placenta.

The *Species* are;

1. Guidonia *ulmi foliis, flore roſeo. Plum. Nov. Gen.* Guidonia with Elm-leaves, and a roſe-colour'd Flower.

2. Guidonia *ulmi foliis, flore niveo. Plum. Nov. Gen.* Guidonia with Elm-leaves, and a white Flower.

3. Guidonia *aurantii foliis, aculeata. Plum. Nov. Gen.* Prickly Guidonia, with Orange-leaves.

4. Guidonia *nucis juglandis foliis, major. Plum. Nov. Gen.* Greater Guidonia, with Walnut-tree-leaves.

5. Guidonia *nucis juglandis foliis, minor. Plum. Nov. Gen.* Leſſer Guidonia, with Walnut-tree-leaves.

Theſe Plants are all of them very tender; ſo muſt be placed in the Bark-ſtove, eſpecially while they are young, which will greatly forward their Growth. Theſe may be all propagated by Seeds, which ſhould be ſown in Pots filled with freſh light Earth, early in the Spring, and plunged into an Hot-bed of Tanners Bark. When the Plants are about three Inches high, they ſhould be carefully taken up, and each tranſplanted into a ſeparate Pot, and plunged into the Hot-bed again, obſerving to ſhade them from the Sun until they have taken Root; after which time they muſt be treated as hath been directed for the Guazuma. The two firſt Winters, theſe Plants may be placed in the Bark-ſtove; but when they have acquir'd Strength, they may be inured to bear the open Air in the warmeſt Part of the Summer; and in Winter they may be placed on Stands in the dry Stove, where, if they are kept in a moderate Temperature of Warmth, they will thrive very well, and produce their Flowers every Year in *July* and *Auguſt*; but they rarely perfect Seeds in this Country.

They may be alſo propagated by laying their Branches down into the Earth: this ſhould be done in *April*; and if they are duly watered, they will be rooted enough to tranſplant by the following Year; when they ſhould be taken off, and tranſplanted into Pots, and managed as is directed for the Seedling-plants. But when it is propoſed to increaſe theſe Plants after this manner, it will be proper to encourage ſome Shoots near the Bottom of the Stems of the old Plants (from whence they are very apt to ſend forth Shoots); becauſe theſe will be much more convenient to make Layers, than thoſe which are placed higher from the Earth.

Some of theſe Plants will grow from Cuttings, when they are rightly managed. Theſe Cuttings ſhould be planted in the Beginning of *April* (juſt before the Plants begin to ſhoot) in Pots filled with rich light Earth, and plunged into a moderate Hot-bed of Tanners Bark, obſerving to water and ſhade them until they have taken Root, which will be in about two Months, if they ſucceed; when they may be inured to bear the open Air by degrees; and in *Auguſt* they may be tranſplanted into ſeparate Pots, and afterward muſt be managed as is before directed for the Seedling-plants and Layers. The Plants thus raiſed, will produce Flowers much ſooner than thoſe raiſed from Seed; but they ſeldom grow to make ſo large Plants as thoſe do.

GUNDELIA.

This Plant was ſo named by Dr. *Tournefort*, in Honour to Dr. *Gundelſcheimer*, who found it in his Travels in Company with Dr. *Tournefort* in the *Levant*.

The *Characters* are;

It is a Plant with a floſculous Flower, gathered into a kind of Head, conſiſting of many Florets, coming out of a common Empalement, and ſitting on the Embryoes of the Seed, which are hid in the Cells of the Empalement, and afterward become roundiſh Seeds ending in a Point.

The *Species* are;

1. Gundelia *Orientalis, acanthi aculeati foliis, floribus intenſe purpureis, capite araneoſa lanugine obſito. Tourn. Cor.* Eaſtern Gundelia, with a prickly Bears-breech-leaf, deep-purple Flowers, and an Head woven, as it were, with a Cobweb.

2. Gundelia *Orientalis, acanthi aculeati folio, capite glabro. Tourn. Cor.* Eaſtern Gundelia, with a prickly Bears-breech-leaf, and a ſmooth Head.

The ſecond Sort is figur'd and deſcribed in the ſecond Volume of Dr. *Tournefort*'s Ttavels in the *Levant*. It was diſcovered, as I ſaid, by Dr. *Gundelſcheimer* near *Baibout*, in their Journey to *Armenia*, growing in dry ſtony Places.

The fiſt Sort ſeems to be a Variety of the ſecond, and was found intermixed with it in the ſame Places.

Theſe Plants are propagated by Seed, which ſhould be ſown the Beginning of *March*, in a warm dry Border of freſh, but lean Earth; for they will not live long in a moiſt rich Soil. When the Plants come up, they muſt be carefully cleared from Weeds; as they grow large, they ſhould be thinned and tranſplanted out in warm Borders, leaving the Plants, which are deſigned to remain, about two Feet aſunder, that they may have room to ſpread. After this there is no other Culture required, but to keep them clear from Weeds; and in two Years they will produce their Flowers, when they will make a fine Appearance amongſt other hardy Flowers in the Pleaſure-garden: but theſe Plants rarely perfect Seeds in this Country, which is the Caſe of ſeveral other of the headed Plants; for if the Seaſon ſhould prove moiſt at the time when the Plants are in Flower, the Wet ſoaks into the Empalement where the Embryoes of the Seed are lodged, which prevents their ripening, and cauſes them to rot; ſo that the Seeds muſt be procured from Abroad.

Theſe Plants are apt to ſhoot their Roots very deep into the Ground, which renders it very difficult to tranſplant them with Safety, eſpecially after they are grown to any Size: therefore it will be proper to permit moſt of the Plants to remain in the Place where they were ſown; and ſuch of them as are removed, ſhould be tranſplanted the Autumn following their coming up. If theſe are ſown upon a ſhallow Ground, where there is a gravelly Bottom, they will ſucceed better than in a rich deep Soil, where the Roots frequently run ſo deep into the Ground, as to be rotted in Winter by Moiſture.

H Æ

HÆMANTHUS, Blood-flower.

The *Characters* are;

The Empalement of the Flower is large, compoſed of ſix oblong Leaves, which grow in form of an Umbel, and do not fall off: the Flower is of one Leaf, which is cut into ſix ſlender Parts at the Top; but the Bottom is tubulous and angular: in the Centre of each Flower is ſituated the oblong Pointal, attended by ſix Stamina, *which are inſerted at their Baſe into the Petals of the Flower, but are ſtretched out much longer at the Top: the Pointal afterward changes to a roundiſh Berry, having three Cells, each containing one triangular Seed.*

The *Species* are;

1. HÆMANTHUS *foliis linguæformibus. Flor. Leyd.* Blood-flower, or *African* Tulip, *vulgo*.

2. HÆMANTHUS *foliis lanceolatis. Lin. Hort. Cliff.* Blood-flower with ſpear-ſhaped Leaves.

Theſe Plants were brought from the *Cape of Good Hope* to the curious Gardens in *Holland*; where the firſt Sort has been long an Inhabitant. This has been well figured in ſome of the old *Herbals*, and Books of Flowers: in ſome of theſe Books it is called a Lily, in others Lilionarciſſus, and Narciſſus Indicus; and by one Author *Tulipa Promontorii Bonæ Spei*, *i. e.* Tulip of the *Cape of Good Hope*. Of this Sort the Gardeners in *Holland* make two or three Varieties, which they diſtinguiſh by the Shape of their bulbous Roots; but they are not diſtinct Species. This Sort is only propagated by the Roots in *Europe*; for it never produces any Seeds. The Seaſon for tranſplanting the Bulbs is in *May* or *June*, when the Leaves are decayed, at which time they may be kept out of the Earth two or three Months without Damage; tho' the ſooner they are tranſplanted. the ſtronger the Roots will be, and more likely to flower. The Soil in which they muſt be planted ſhould be one half freſh Earth from a Paſture, and a fourth Part rotten Dung, and the other Part Sea-ſand; theſe ſhould be well mixed two or three Months before uſed, that their Parts may be better incorporated: then you ſhould put a few Stones in the Bottom of each Pot, that the Water may be the eaſier drained off; and afterwards put the Earth into the Pots, planting the Bulbs therein, only ſo deep as that their Upper-parts may be juſt covered: then place the Pots in a ſhady Situation, giving them now-and-then a little Water in very dry Weather; but you muſt obſerve, never to let them have too much Moiſture, eſpecially at the time when they are deſtitute of Leaves: in this Situation they may continue until the Latter-end of *Auguſt*, when they muſt be removed to a warmer Place; for about that Seaſon they will begin to puſh out new Roots: but they may remain abroad until the Middle or Latter-end of *September*, at which time they ſhould be removed into a moderate Stove, where they muſt be carefully preſerved, obſerving frequently to refreſh them with Water; for now their Leaves will appear, and will, in a ſhort time, grow to a large Size, if the Roots are ſtrong; but you muſt not give them too much Water at once, which will endanger their rotting. The Stove in which theſe Plants are placed ſhould be kept to near the temperate Heat, as is mark'd on the Botanical Thermometers; in which they will thrive very well, and if the Bulbs are ſtrong, will produce their beautiful Flowers late in Autumn, or in Winter, which renders them very valuable, it being a time when few other Flowers appear. Theſe Roots ſhould not be tranſplanted oftener than every other Year: but the Earth in the Upper-part of the Pots ſhould be taken out twice a Year, and ſome freſh Earth put in, which will greatly ſtrengthen the Roots.

The Flowers of this Sort generally come up before the green Leaves appear: but theſe Plants ſeldom flower in *Europe*, nor do the Roots propagate much by Off-ſets; for in upward of twenty Years, which I have had this Plant, it has produced but one Off-ſet, and has flowered but twice in that time; nor do I find, that it flowers any better in *Holland*: but they have either a Method of propagating the Roots, by ſplitting them, or they are furniſhed with Seeds from abroad; for in ſome Gardens they have plenty of the Roots: but altho' this Plant doth not often flower, yet, for the Singularity of the Plant, it may have a Place in the Stove; for in Winter the green Leaves appear, which are ſeldom more than two: theſe are very long and broad, ſhaped like a Tongue, and are reflexed backward, one on each Side, to the Ground; ſo that they ſpread over the whole Surface of the Pots in which they grow, and have a different Appearance from all the Plants at preſent known.

The ſecond Sort was brought from the *Cape of Good Hope* to the curious Garden of Mr. *Beamont* in *Holland*; but is now become pretty common in moſt of the curious Gardens in *Europe*. This Sort riſes up with a Stem of one Foot in Height, which is covered with dark Spots like that of the Dragon; which occaſioned Dr. *Boerhaave* to give it the Title of Dracunculoides: but, upon examining the Characters of the Flower, it was found to agree with thoſe of the Hæmanthus, to which it has been ſince joined, by later Botaniſts. The Roots of this Sort are not bulbous, but run out into many fleſhy long Tubers, ſomewhat like thoſe of the Spiderwort: the Stem riſes about one Foot high, from whence the Leaves come out, embracing the herbaceous Stalk, which are about ſix Inches long, having a large Midrib, and are waved on their Edges: the Flowers grow upon ſtrong Footſtalks, which are produced from the Stems by the Side of the Leaves, and are about one Foot and an half high, ſupporting an Umbel of fine red Flowers, incloſed in one common Empalement. Theſe Flowers are often ſucceeded by fine ſcarlet Berries, each having one Seed.

It is propagated by Off-ſets, which ſhould be taken off in *May*, at which time theſe Plants begin to loſe their Leaves; for they are ready to put out new Leaves in *July*, and continue growing all the Autumn and Winter; but toward the End of *May* the Leaves begin to decay; at which time the Plants ſhould be new-potted; and if they have any Off-ſets which are ſufficiently rooted, they muſt be taken off, and planted in Pots filled with light rich Earth. In tranſplanting of theſe Plants, there muſt be particular Care to lay ſome Stones and Rubbiſh in the Bottom of the Pots to let the Moiſture paſs off; for if the Wet is detained in the Pots, it will ſoon cauſe the Roots to periſh. During the Seaſon of their Inactivity, which is commonly from the Beginning of *May* to the Beginning of *July*, they muſt not have too much Water, leſt it rot their Roots; but when they are in Vigour, they will require a little more.

Theſe Plants muſt be conſtantly kept in dry Stoves; for they do not thrive well, if they are ſet abroad, even in the warmeſt Part of the Summer; ſo that it is much the better Method to let them remain in the Stove, with Euphorbiums, and other tender ſucculent Plants, which require a large Share of free Air in warm Weather; in which Situation they will thrive exceeding well, and will annually produce their beautiful Flowers, which make a fine Appearance among other rare Plants. During the Winter-ſeaſon they muſt be kept in a moderate Temperature of Heat, and ſhould be frequently refreſhed with Water; but it muſt not be given to them in large Quantities, leſt it rot them. This Plant is not conſtant in the time of its flowering, but the moſt uſual Seaſon is in *July* or *Auguſt*; but when it flowers in the Spring, it frequently perfects Seeds in this Country; which, if ſown ſoon after they are ripe, and preſerved in the Stove till Spring, and then placed in an Hot-bed of Tanners Bark, will grow very well; and by this Method a much greater Increaſe of the Plants may be obtained in a Year or two, than could be by Off-ſets in many Years.

HÆMATOXYLUM, Logwood, or *Campechy* Wood.

The *Characters* are;

The Empalement of the Flower conſiſts of one Leaf, which is cut into five Parts: the Flower has five oval Leaves, which ſpread open, and are larger than the Empalement: in the

Centre of the Flower is ſituated the Pointal, attended by ten ſlender Stamina, *which are ſtretched out beyond the Petals: the Pointal afterward turns to a compreſſed Pod, which opens both ways, and contains two or three compreſſed kidney-ſhaped Seeds.*

There is but one *Species* of this Tree at preſent known, nor hath the Plant been long introduced into *Europe*; tho' the Wood has been long uſed in dyeing of Red and Scarlets; and it is from this Wood affording ſuch Dyes, that Dr. *Linnæus* has given this Title to the Genus of *Hæmatoxylum, i. e.* Bloodwood. Thoſe Authors who have mentioned this Tree before him (which are but few) have given it the Title of *Campechy* Wood, from its growing plentifully in the Bay of *Campechy*: but as it is found growing in many other Places, that Name is very improperly applied to it.

Hæmatoxylum *foliis pennatis, foliolis ovato-cordatis.* Logwood with winged Leaves, whoſe ſmall Lobes are of an oval Heart-ſhape.

This Tree, in the natural Places of its Growth, is from ſixteen to twenty-four Feet in Height: the Stems generally are very crooked and deformed; the Branches alſo come out very ſtraggling and irregular, and are ſeldom well cloathed with Leaves, ſo that it makes but an indifferent Appearance: but the Wood is of great Service in dyeing of Reds, Scarlets, and ſome other Colours; without which it will be very difficult to dye ſome of theſe Colours. This Tree growing plentifully in the Bays of *Campechy* and *Honduras*, which Places are in the Poſſeſſion of the *Spaniards*, who pretend to have a Right of excluding all other Nations from cutting of this Wood, has occaſioned many Differences between them and the other Powers of *Europe*; but particularly with the *Engliſh*, who claim a Privilege, granted to them by antient Treaties, of cutting this Wood in both thoſe Places: but it is to be hoped, that the *Engliſh* may be ſupplied with this Commodity from their own Settlements in *America*, where it grows as well, as in either of thoſe Bays; ſo that it muſt be wholly aſcribed to the Indolence of the Inhabitants of the *Britiſh* Colonies, in not cultivating theſe Trees in the Swamps, which will produce little elſe, if there is not enough of this Wood, to ſupply the *Engliſh* Conſumption; for theſe Trees will grow large enough for Uſe, in ten or twelve Years from the Seed: and it is to be obſerved, that where any of theſe Trees have been planted in the *Britiſh* Iſlands, they have in a few Years produced Seeds, which have ſcattered, and filled the neighbouring Ground with young Plants, which have grown extremely well without any Care: ſo that if a few Trees were planted upon all the waſte ſwampy Grounds in the Iſlands, and protected from being over-run with other Plants, they would, in a few Years, ſpread over thoſe Swamps, and a ſufficient Stock of the Wood would be produced: but I fear the Planters have little Curioſity to try theſe Experiments, and nothing but the Culture of Sugar will take Place among them.

This Plant is preſerved in ſome curious Gardens in *England*, for the ſake of Variety. The Seeds are frequently brought from *America*, which, if freſh, do readily grow when ſown upon a good Hot-bed: and if the Plants are kept in a moderate Hot-bed, they will grow to be upward of a Foot high the ſame Year; and, while the Plants are young, they are generally well furniſhed with Leaves; but afterward the Plants make but little Progreſs, and are frequently but thinly cloathed with them. Theſe Plants are very tender; ſo ſhould be conſtantly kept in the Bark-ſtove; where if they are duly watered, and the Stove kept in a good Degree of Heat, the Plants may be preſerved very well. There are ſome of theſe Plants now in *England*, which are upward of ſix Feet high, and as thriving as thoſe in their native Soil.

HALICACABUM. *Vide* Alkekengi.

HALICACABUS PEREGRINA. *Vide* Corindum.

HALIMUS. *Vide* Atriplex.

HALLERIA, *African* Fly Honeyſuckle, *vulgo*.

This Plant was ſo named by Dr. *Linnæus*, in Honour to *Albertus Haller*, Profeſſor of Botany at *Gottingen*.

The *Characters* are;

The Empalement of the Flower is of one Leaf, which is cut into three Segments, the upper one being much broader than either of the other: the Flower conſiſts of one Leaf, and is in Shape like the Snap-dragon, having a Tube, and the Upper-part joined, and reflexed, and at the Brim is divided into four Parts: in the Centre of the Flower is ſituated the Pointal, attended by four Stamina, *two of which are longer than the other: the Pointal afterward changes to a round Berry having two Cells, each having one Seed.*

We have but one *Species* of this Plant in *England*; which is,

Halleria *foliis ovatis longitudinaliter ſerratis. Flor. Leyd.* *African* Fly Honeyſuckle, with oval Leaves ſawed the whole Length.

The *Engliſh* Name which I have here added, has been given to this Plant by ſome Gardeners, who obſerved that the Shape of the Flower had ſome Reſemblance to that of the Upright or Fly Honeyſuckle, and, for want of an *Engliſh* Name, gave this to it; or they might take it from the *Latin* Name, by which it was called by Dr. *Boerhaave*, who made it a Species of Honeyſuckle.

This Plant grows to the Height of ſix or eight Feet, having a woody Stem, which is well furniſhed with Branches: theſe have oval ſawed Leaves, which are placed oppoſite by Pairs, and continue green thro' the Year: the Flowers come out ſingly, and are of a red Colour; but, being intermixed with the Leaves, make but ſmall Appearance: yet as the Leaves are green in Winter, the Plants make a Variety in the Green-houſe during that Seaſon.

It may be propagated by Cuttings, which, if planted in Pots filled with light Earth in the Spring, and plunged into a gentle Hot-bed, will ſoon take Root. Theſe Plants may be expoſed in Summer, and will require Plenty of Water: in Winter they muſt be houſed with Myrtles, and other hardy Exotic Plants.

HAMAMELIS, Witch-hazel, *vulgo*.

The *Characters* are;

The Empalement of the Flower is of one Leaf, which is cut into four Segments to the Bottom: the Flower conſiſts of one Leaf, which is cut into four narrow Segments to the Bottom, and turn backward: the Pointal is ſituated in the Centre of the Flower, which is hairy, and is attended by four Stamina: *the Pointal afterward changes to a Capſule or Huſk, having two Cells, each containing one oblong ſmooth ſhining Seed.*

There is but one *Species* of this Plant; which is,

Hamamelis *coryli foliis.* Witch-hazel.

This Shrub grows plentifully in *Virginia*, *Maryland*, and *Carolina*, from whence I have frequently received the Seeds, with this Name of Witch-hazel; which I ſuppoſe has been given to it, from the Reſemblance which the Leaves of this Plant have to thoſe of the Hazel tree. This was diſcovered by Mr. *Baniſter* in *Virginia*, and ſent to Dr. *Plukenet*, who has figured it with the Title of *Piſtachia Virginiana nigra, coryli foliis, i. e.* the black *Virginia* Piſtachia nut, with Hazel-leaves: but it is of late Years this Shrub has been introduced into the *Engliſh* Gardens, where it thrives very well in the open Air; but with us it is a low Shrub, ſeldom riſing above three Feet high, ſhooting out many lateral Branches on every Side, which grow horizontally, ſpreading near the Surface of the Ground. The Leaves are in Shape like thoſe of the Hazel, having many deep Furrows, and are blunt at their Ends. The Flowers appear late in Autumn, after the Leaves are fallen: theſe grow in ſmall Cluſters, and are of a yellowiſh Colour, but fall away without producing Seed.

This is propagated by laying down the young Branches in Autumn, which will take Root in one Year, provided they are duly watered in dry Weather: but moſt of the Plants which are in the Gardens, have been produced from Seeds which came from *America*. Theſe Seeds always remain a whole Year in the Ground; ſo they ſhould be ſown in Pots, which may be plunged into the Ground in a ſhady Part of the Garden, where they may remain all the Summer, and require no other Care but to keep the Pots clean from Weeds, and in very dry Weather to water them now-and-then: in Autumn the Pots may be removed to a warmer Situation, and plunged into the Ground under a warm Hedge; and if the Winter ſhould prove very ſevere, they ſhould have ſome light Covering thrown over the Pots, which will ſecure the Seeds from being deſtroyed. In the Spring the Plants will come up; therefore as the Seaſon grows warm, the Pots may be removed where they may have the morning Sun till Eleven o'Clock; and if they are duly watered in dry Weather, the Plants will have made good Progreſs by Autumn; when they ſhould be tranſplanted, either into ſmall Pots, or into a Nurſery-bed; where in one, or at moſt two Years time, they will be ſtrong enough to plant where they are deſigned to grow.

HARMALA, Wild *Syrian* Rue.

The *Characters* are;

The Leaves are produced alternately on the Branches: the Flower conſiſts of five Leaves, which expand in form of a Roſe: the Ovary ariſes from the Bottom of the Calyx, *and becomes a roundiſh Fruit, divided into three Cells.*

There is but one *Species* of this Plant at preſent known; which is,

Harmala. *Dod.* Harmel, or Wild Rue.

This Plant is propagated by ſowing the Seeds in the Spring, upon a moderate Hot-bed, or on a Border of light Earth; and when the Plants come up, they ſhould be tranſplanted into a Border of good light Earth, at the Diſtance of ſix Inches from each other, where they may remain until the ſucceeding Spring, when they may be removed to the Places where they are to continue. The ſecond Summer after ſowing they generally produce Flowers, and, if the Autumn proves favourable, will perfect their Seeds. The Branches die to the Stump or Head every

Autumn, and freſh are produced in the Spring.

This Plant is mentioned in the Catalogue of Simples annexed to the *College Diſpenſatory*, as a Medicinal Plant; but it is rarely uſed in *England*: nor is it a Plant of any great Beauty; ſo that it is rarely preſerved in Gardens, but for the ſake of Variety.

HAWTHORN. *Vide* Meſpilus.

HAZEL. *Vide* Corylus.

HEDERA, The Ivy-tree.

The *Characters* are;

It is a paraſitic Plant, ſending forth Roots or Fibres from its Branches, by which it is faſtened to either Trees, Walls, or Pales, which are near it; and from thence receives a great Share of its Nouriſhment: the Leaves are angular: the Flowers, for the moſt part, conſiſt of ſix Leaves, and are ſucceeded by round black Berries, which grow in round Bunches, each of which, for the moſt part, contains four Seeds.

The *Species* are;

1. Hedera *arborea. C B.* Common Ivy.

2. Hedera *arborea, foliis cymis flaveſcentibus.* Common Ivy, with the Leaves upon the Upper-part of the Shoots of a pale-yellow Colour.

3. Hedera *communis minor, foliis ex albo & viridi variis. Boerh. Ind. alt.* The ſilver-ſtriped Ivy.

4. Hedera *communis minor, foliis ex luteo variegatis.* The yellow variegated Ivy.

The firſt of theſe Plants is very common in moſt Parts of *England*, growing ſometimes very large, and forming a ſort of Trees, and at other times faſtening itſelf to whatever Tree, Wall, or Pale, it ſtands near, where it appears like a trailing Plant; which has occaſioned moſt Botanic Writers to mention them as two diſtinct Plants, whereas in reality they are the ſame, their Difference being occaſioned by their different Situations; as may be often obſerved, when the upper Branches of theſe trailing Plants get above the Trees or Walls' to which they are faſtened; then they grow more woody, and form large Heads producing Fruit; whereas that Part which is below, never makes any Effort to produce either Flowers or Fruit.

Theſe Plants are eaſily propagated by their trailing Branches, which ſend forth Roots at every Joint; which Branches, being cut off, and planted, will grow in almoſt any Soil or Situation, and may be trained up to Stems, or ſuffered to remain Climbers, to cover Walls, Pales, &c.

They may alſo be propagated by Seeds, which ſhould be ſown ſoon after they are ripe: but they very often remain one Year in the Ground before they appear; which being a tedious Method, moſt People make uſe of the former, which is very expeditious and certain.

The ſecond Sort is a Variety of the firſt, from which it differs in having the Leaves upon the Upper-part of the Branches, of a pale-yellow Colour: this is propagated in the ſame manner as the former, and may be preſerved for the ſake of Variety.

The third and fourth Sorts are very beautiful Plants, and are often planted againſt Walls or Buildings, where they adhere to the Bricks, and grow ſo cloſe as to hide them from the Sight: theſe alſo may be trained up to regular Stems and Heads, and are increaſed as the former Sorts.

HEDERA TERRESTRIS. *Vide* Glechoma.

HEDYPNOIS, Trailing crooked-ſeeded Hawkweed.

The *Characters* are;

The Cup of the Flower is like a ſtriated Column, or a Melon: the little Leaves of the Flower-cup, when the Flower is fallen off, embrace each of them one ſingle umbilicated Seed; but in the Middle of the little Head are other naked Seeds, which form an Head.

The *Species* are;

1. Hedypnois *annua. Tourn.* Trailing crooked-ſeeded Hawkweed, or common Hedypnois.

2. Hedypnois *minor Cretica annua. Tourn. Cor.* Annual Hedypnois from *Crete.*

3. Hedypnois *annua, capite maximo. Boerh. Ind.* Annual Hedypnois, with a large Head.

Theſe Plants are ſeldom propagated, except in Botanic Gardens, for the ſake of Variety, as being Plants of no great Beauty or Uſe. The firſt and third Species are found wild in the Southern Parts of *France*, in *Spain*, and *Italy*; but the ſecond Sort was brought from *Crete* by Monſieur *Tournefort*. Theſe may all be propagated by ſowing their Seeds toward the latter End of *March*, or the Beginning of *April*, in an open Situation, and a dry Soil, where they may remain to flower and ſeed; for they care not to be tranſplanted. The Diſtance which theſe Plants ſhould be allowed, muſt not be leſs than a Foot; and if the Soil be good, a Foot and an half aſunder will be full little enough; for they are very apt to ſpread to a great Diſtance; and their Branches trailing upon the Ground, would occaſion their rotting, were they to ſtand too cloſe together. Theſe Plants produce their Flowers in *June* and *July*; and their Seeds are perfected in *Auguſt*, when they ſhould be gathered, and preſerved for the ſucceding Year.

HEDYSARUM, *French* Honeyſuckle.

The *Characters* are;

It hath papilionaceous Flowers, which are collected into an Head or Spike: the Pointal of the Flower, riſing out of the Empalement, becomes a jointed undulated Pod; in each of which Joints is lodged a kidney-ſhaped Seed.

The *Species* are;

1. Hedysarum *clypeatum, flore ſuaviter rubente. H. Eyſt. French* Honeyſuckle, with a delicate red Flower.

2. Hedysarum *clypeatum, flore albido. Tourn. French* Honeyſuckle, with a whitiſh Flower.

3. Hedysarum *clypeatum minus, flore purpureo. Raii Hiſt.* Smaller *French* Honeyſuckle, with a purple Flower.

4. Hedysarum *triphyllum Canadenſe. Cornut.* Three-leav'd *Canada French* Honeyſuckle.

5. Hedysarum *annuum, ſiliqua aſpera undulata intorta. Tourn.* Annual *French* Honeyſuckle, with a rough waved and wreathed Pod.

6. Hedysarum *Alpinum, ſiliqua lævi, flore purpuro-cæruleo. Tourn. Alpine French* Honeyſuckle, with a ſmooth Pod, and a blue purple Flower.

7. Hedysarum *Alpinum, ſiliqua lævi, flore albido. Tourn. Alpine French* Honeyſuckle, with a ſmooth Pod, and a white Flower.

8. Hedysarum *minus diphyllum, flore luteo. Sloan. Cat.* Smaller two-leav'd *French* Honeyſuckle, with a yellow Flower.

9. Hedysarum *triphyllum fruticoſum, flore purpureo, ſiliqua varie diſtorta. Sloan. Cat.* Three leav'd ſhrubby *French* Honeyſuckle, with a purple

a purple Flower, and a variouſly diſtorted Pod.

10. Hedysarum *triphyllum fruticoſum minus. Sloan. Cat.* Smaller three leav'd *French* ſhrubby Honeyſuckle.

11. Hedysarum *triphyllum fruticoſum ſupinum, flore purpureo. Sloan. Cat.* Three-leav'd ſhrubby dwarf *French* Honeyſuckle, with a purple Flower.

12. Hedysarum *annuum majus Zeylanicum, mimoſæ foliis. Tourn.* The greater annual *French* Honeyſuckle of *Zeylon*, with Leaves like the ſenſitive Plant.

13. Hedysarum *annuum minus Zeylanicum, mimoſæ foliis. Tourn.* The leſſer annual *French* Honeyſuckle of *Zeylon*, with Leaves like the ſenſitive Plant.

14. Hedysarum *arboreſcens, foliis mimoſæ. Plum. Cat.* Shrubby *French* Honeyſuckle, with Leaves like the ſenſitive Plant.

15. Hedysarum *caule hirſuto, mimoſæ foliis alatis, pinnis acutis minimis gramineis. Sloan. Cat. French* Honeyſuckle with an hairy Stalk, winged Leaves like the ſenſitive Plant, and ſmalleſt pointed graſs-like Wings.

26. Hedysarum *minimum procumbens, foliis pinnatis ſubrotundis, flore luteo. Houſt.* Smaller trailing *French* Honeyſuckle, with roundiſh winged Leaves, and a yellow Flower.

17. Hedysarum *triphyllum fruteſcens, foliis ſubrotundis & ſubtus ſericeis, flore purpureo. Houſt.* Three-leav'd ſhrubby *French* Honeyſuckle, with roundiſh Leaves, which are ſilky underneath, and a purple Flower.

18. Hedysarum *triphyllum humile, flore conglomerato, calyce villoſo. Houſt.* Dwarf three-leav'd *French* Honeyſuckle, with Flowers growing in Cluſters, and an hairy Cup.

19. Hedysarum *triphyllum procumbens, foliis rotundioribus & minoribus, ſiliquis tenuibus & intortis. Houſt.* Trailing three-leav'd *French* Honeyſuckle, with ſmaller and rounder Leaves, and narrow intorted Pods.

20. Hedysarum *triphyllum, caule triangulari, foliis mucronatis, ſiliquis tenuibus intortis. Houſt.* Three-leav'd *French* Honeyſuckle, with a triangular Stalk, pointed Leaves, and a narrow intorted Pod.

21. Hedysarum *triphyllum annuum erectum, ſiliquis intortis, & ad extremitatem amplioribus. Houſt.* Three-leav'd annual upright *French* Honeyſuckle, with intorted Pods, which are broad at their Extremity.

12. Hedysarum *triphyllum Americanum ſcandens, flore purpureo.* Three-leav'd climbing *American French* Honeyſuckle, with a purple Flower.

The two firſt Species are very common in *England*, being propagated by the Gardeners near *London*, who ſupply the Markets with Plants and Flowers in the Spring of the Year.

They are propagated by ſowing their Seeds in *April*, in a Bed of light freſh Earth; and when the Plants come up, they ſhould be tranſplanted into other Beds of the like Earth, and in an open Situation, at about ſix or eight Inches Diſtance from each other, leaving a Path between every four Rows, to go between them to hoe, and clear them from Weeds: in theſe Beds they may remain until *Michaelmas*; and then they may be tranſplanted into the large Borders of a Parterre or Pleaſure-garden, allowing them at leaſt two Feet Diſtance from other Plants, amongſt which they ſhould be interſperſed, to continue the Succeſſion of Flowers; where they will make a fine Appearance when blown, eſpecially the red Sort, which produces very handſome Flowers.

Theſe are tolerably hardy, and are ſeldom hurt but by extreme Cold, or great Rains. Moiſture, eſpecially in the Winter-ſeaſon, is very apt to rot their Roots; therefore they ſhould be planted in a dry Soil, and in a warm Situation; and in the Spring they may be removed to the Borders; where if they are much expoſed, or the Soil moiſt, they ſhould not be tranſplanted till *March*, juſt before they begin to ſhoot out their Flower-ſtems: but then they will not produce their Flowers ſo ſtrong as thoſe which are planted in Autumn.

In order to have a Succeſſion of theſe Plants, their Seeds ſhould be ſown every Spring; for the old Roots ſeldom continue long after they have flowered; and when they do remain, their Flowers are ſeldom ſo ſtrong as from young Roots. Their Seaſon of flowering is in *June* and *July*, and their Seeds are perfected in *Auguſt* and *September*.

The third Sort is preſerved in ſome Gardens for Variety; but the Flowers are not near ſo fair as thoſe of the two former: this requires the ſame Management as is directed for them.

The fourth Sort hath a perennial Root, which will abide many Years, if planted in a dry Soil. This is propagated by ſowing the Seeds in the manner directed for the former: but when the Plants are come up two Inches high, they ſhould be tranſplanted where they are to remain for good; for if they are not too thick in the Seed-bed, they may be ſuffered to remain there until the *March* following; at which time they ſhould be carefully taken up, and tranſplanted into the Borders where they are deſigned to ſtand; for their Roots generally run down very deep, ſo that it is not ſafe to remove them often. This Plant produces its Flowers about the ſame time of the Year as the former, and perfects its Seeds in Autumn; and the Roots will abide in the open Air very well, reſiſting the ſevereſt Cold, provided they are planted in a dry Soil.

The fifth, ſixth, and ſeventh Sorts are very hardy Plants; ſo will live in the open Air in this Country. Theſe are propagated by Seeds, which muſt be ſown in *March*, in a Bed or Border of light Earth, in the Place where they are deſigned to remain; becauſe as they ſhoot their Roots deep into the Earth, they do not well bear tranſplanting. The Plants, as they advance in their Growth, ſhould be thinned where they are too cloſe; leaving thoſe which are deſigned for Flowering, about a Foot or eighteen Inches apart. In dry Weather they will require ſome Water; and to keep them clear from Weeds, is all the Culture they want. In *July* they will flower, and, if the Autumn proves favourable, they will perfect their Seeds in *September*.

The eighth, ninth, tenth, and eleventh Sorts were diſcovered by Sir *Hans Sloane*, Bart. in *Jamaica*; from whence the Seeds have been ſent into *England*, and have ſucceeded in ſeveral curious Gardens. Theſe are all of them annual Plants, notwithſtanding ſome of them grow ſhrubby, and will riſe to the Height of eight or nine Feet; for they periſh as ſoon as they have ripened their Seeds in the Country of their natural Growth.

The twelfth and thirteenth Sorts were brought from *Ceylon*, by the learned Botaniſt, Dr. *Herman*, to the Phyſic-garden at *Leyden*; but they are not peculiar to that Country; for I have received Seeds of both theſe Sorts from ſeveral Parts of *America*, which have flouriſhed in the Phyſic-garden at *Chelſea*.

The fourteenth Sort was diſcovered by Father *Plumier*, in ſome of the *French* Settlements in *America*. The Seeds of this Sort were ſent me from *Campechy*, by the late Dr. *William Houſtoun*.

The fixteenth, ſeventeenth, eighteenth, nineteenth, twentieth, and twenty-firſt Sorts were diſcovered by the late Dr. *William Houſtoun* at *La Vera Cruz*, *Jamaica*, *Campechy*, and *Carthagena*; from which Places he ſent the Seeds and Specimens into *England*. The twenty ſecond Sort I received from *South-Carolina*, which grew in the Phyſic-garden at *Chelſea*.

Theſe are moſt of them annual Plants; and as they are Natives of warm Countries, require to be tenderly managed, to have them thrive in this Country. The Seeds of theſe Plants ſhould be ſown on an Hot-bed, the Beginning of *March*; and when the Plants are about two Inches high, they muſt be carefully tranſplanted each into a ſeparate ſmall Pot filled with light rich Earth, and then plunged into an Hot-bed of Tanners Bark, being careful to ſhade them from the Sun until they have taken Root; after which time they muſt have freſh Air admitted to them every Day, in proportion to the Heat of the Weather: they muſt alſo be frequently refreſhed with Water, which will greatly promote their Growth: and as thoſe Sorts which grow upright, riſe to touch the Glaſſes of the Hot-bed, they ſhould be removed into the Bark-bed in the Stove; or into a Glaſs-caſe, where they may have room to grow. If theſe Plants are brought forward early in the Spring, they will begin to flower by the Beginning of *July*, and then they will have time to ripen their Seeds before Winter; for if they are backward in flowering, they ſeldom perfect their Seed in this Country.

The twelfth Sort rarely perfects Seed in *England*; for it generally grows to be five or ſix Feet high, and is always late before it flowers; but the thirteenth Sort will produce good Seeds every Year, if rightly managed.

The ſeventeenth, eighteenth, and twenty-ſecond Sorts will abide two Years, provided they are placed in a warm Stove in Winter; and theſe Plants, when they are kept through the Winter, will flower early the following Summer, ſo that good Seeds may be obtained from them.

All theſe Plants afford an agreeable Variety in the Stove amongſt other Exotic Plants in Autumn, when they are in Flower; ſo that they are preſerved by thoſe who are curious in Botany.

HELENIA, Baſtard Elecampane, or Willow-leav'd Sunflower.

The *Characters* are;

It hath a compound radiated Flower, conſiſting of many Florets, which are Hermaphrodite, and of Semiflorets, which are Female: the Ovaries ſtand on a naked Placenta, *each bearing an antient Crown: all theſe Parts are included in a ſimple Empalement, which expands, and is cut almoſt to the Bottom in ſeveral Parts.*

The Title of this Genus has been altered by Dr. *Linnæus* from *Heleniaſtrum*, which was given to it by Monſieur *Vaillant*, Profeſſor of Botany at *Paris*.

The *Species* are;

1. **Helenia** *foliis linearibus decurrentibus.* Baſtard Elecampane, with a longer and narrower running Leaf.

2. **Helenia** *foliis lanceolatis decurrentibus.* Baſtard Elecampane, with a broader and ſhorter running Leaf.

Theſe Plants are both of them Natives of *America:* the Seeds of both Sorts I have received from *Virginia* and *New-England*, where they grow wild in great Plenty in the Woods, and other ſhady Places, where the Ground is moiſt. They may be propagated by Seeds, or by parting their Roots; but the latter is generally practiſed in this Country, becauſe they ſeldom perfect their Seeds here; but if Seeds are procured from abroad, they ſhould be ſown the Beginning of *March* on a warm Border of light Earth: and if the Seeds ſhould not come up the firſt Year, the Ground ſhould not be diſturbed; becauſe they often remain a whole Year under ground, before the Plants appear: in which Caſe there is nothing more to be done, but to keep the Ground clear from Weeds, and wait till the Plants come up. When they appear, if the Seaſon proves dry, they muſt be often watered, which will greatly forward their Growth; and where the Plants come up too cloſe to each other, they ſhould be thinned, and tranſplanted out into Beds a Foot aſunder every Way; being careful to ſhade them until they have taken Root, as alſo to water them in dry Weather. In the Autumn they will produce their Flowers, which will continue till the Froſt prevents them; and their Roots will abide many Years, and afford many Off-ſets, by which they may be increaſed.

The beſt Seaſon to tranſplant the old Roots, and to part them for Increaſe, is in *October*, or the Beginning of *March*, juſt before they begin to ſhoot; but if the Spring ſhould prove dry, they muſt be duly watered, otherwiſe they will not produce many Flowers the ſame Year. Theſe Plants ſhould not be removed oftener than every other Year; for as they do not ſpread their Roots very wide, they will very well continue two Years within due Compaſs. They delight in a Soil rather moiſt than dry, provided it be not too ſtrong, or hold the Wet in Winter: but if they are planted in a dry Soil, they muſt be often and plentifully watered in dry Weather, to make them produce plenty of Flowers.

Theſe Plants generally riſe about three Feet and an half, or four Feet high; therefore ſhould be planted in the Middle of large Borders, intermixed with Flowers of the ſame Growth, where they will make a pretty Variety, becauſe they continue a long time in Flower: and as they require very little Care to cultivate them, they deſerve a Place in every large Garden. Their Flowers reſemble thoſe of the ſmaller Kinds of Sunflower, and have been by ſome Botaniſts ranged in that Genus. The time of their Flowering is from *July* until the Froſt ſtops them.

HELENIUM, Elecampane.

The *Characters* are;

It hath a radiated Flower, whoſe Florets are Hermaphrodite, but the Semiflorets are Female; both theſe are yellow; the Ovaries, which reſt on a naked Placenta, *are crowned with Down: all theſe Parts are included in a ſcaly Cup: to theſe Notes may be added, The Leaves growing alternately on the Stalks, and the Flowers grow on the Top of the Branches.*

The *Species* are;

1. **Helenium** *vulgare. C. B. P.* Common Elecampane.

2. HELENIUM *virgæ paſtoris folio, ſubtus incano & tomentoſo. Vaill. Mem.* Yellow Starwort, with a wild Teaſel-leaf, which is hoary and woolly underneath.

3. HELENIUM *villoſum, conyzæ folio, magno flore. Vaill. Mem.* Yellow hairy Starwort, with a Fleabane-leaf, and a large Flower.

4. HELENIUM *conyzæ folio, prægrandi flore, calyce piloſiſſimo. Vaill. Mem.* Yellow Starwort, with a Fleabane-leaf, and a larger Flower, with a very hairy Cup.

5. HELENIUM *Creticum, conyzæ folio, aſphodeli radice. Vaill. Mem.* Yellow Starwort of *Crete*, with a Fleabane-leaf, and an Aſphodel-root.

6. HELENIUM *paluſtre, folio longiori lanuginoſo. Vaill. Mem.* Marſh yellow Starwort, with a longer woolly Leaf.

7. HELENIUM *conyzæ folio lanuginoſo, radice odora. Vaill. Mem.* Yellow Starwort, with a woolly Fleabane leaf, and a ſweet-ſmelling Root.

8. HELENIUM *paluſtre villoſum odoratum, conyzæ folio. Vaill. Mem.* Hairy marſh ſweet-ſmelling Starwort, with a Fleabane leaf.

9. HELENIUM *montanum villoſum anguſtifolium, flore magno ſingulari. Vaill. Mem.* Hairy mountain yellow Starwort, with a narrow Leaf, and a large ſingle Flower.

10. HELENIUM *lanuginoſum anguſtifolium, ſummo caule ramoſo. Vaill. Mem.* Woolly yellow Starwort, with a narrow Leaf, and branching at the Top of the Stalks.

11. HELENIUM *pratenſe autumnale, conyzæ foliis caulem amplexantibus. Vaill.* Meadow yellow Starwort of the Autumn, with Fleabane-leaves encompaſſing the Stalks, commonly called *Conyza media*.

12. HELENIUM *hirſutum, ſalicis folio. Vaill. Mem.* Hairy yellow Starwort, with a Willow-leaf.

13. HELENIUM *montanum, ſalicis folio ſubtus incano. Vaill. Mem.* Mountain yellow Starwort, with a Willow-leaf, which is hoary underneath.

14. HELENIUM *ſalicis folio glabro. Vaill. Mem.* Yellow Starwort, with a ſmooth Willow-leaf.

15. HELENIUM *ſpiræa folio. Vaill. Mem.* Yellow Starwort, with a Spirea-leaf.

16. HELENIUM *glabrum, myrti lato, ſerrato, cuſpidatoque folio. Vaill. Mem.* Smooth yellow Starwort, with a broad, ſawed, and pointed Myrtle leaf.

17. HELENIUM *ciſti folio non crenato, magno flore. Vaill. Mem.* Yellow Starwort, with a Ciſtus-leaf, and a large Flower.

18. HELENIUM *lanuginoſum, piloſellæ foliis. Vaill. Mem.* Woolly yellow Starwart, with Mouſe-ear-leaves.

19. HELENIUM *paluſtre ſubhirſutum, foliis calthæ. Vaill. Mem.* Marſh roughiſh yellow Starwort, with Marigold-leaves.

20. HELENIUM *ſalicis folio, floribus parvis, fere umbellatis. Vaill. Mem.* Yellow Starwort with a Willow-leaf, and ſmall Flowers growing almoſt in an Umbel.

21. HELENIUM *paluſtre annuum, foliis criſpis. Vaill.* Annual marſh yellow Starwort, with curled Leaves, commonly called Marſh Fleabane.

22. HELENIUM *paluſtre annuum, hyſſopi foliis criſpis. Vaill. Mem.* Marſh annual yellow Starwort, with curled Hyſſop-leaves.

23. HELENIUM *ramoſum, cauliculis ſparſis, calthæ arvenſis folio. Vaill. Mem.* Branching yellow Starwort, with ſparſe Stalks, and a Field-marigold-leaf.

24. HELENIUM *Ægyptiacum to-*

mentoſum & incanum, bellidis, foliis criſpis. D. Lippi. Hoary woolly *Egyptian* yellow Starwort, with curled Daiſy-leaves.

25. Helenium *Ægyptiacum tomentoſum & incanum, polii folio. D. Lippi.* Hoary woolly *Egyptian* yellow Starwort, with a Mountain-poley-leaf.

26. Helenium *bellidis, foliis amplis, aſphodeli radice. Vaill. Mem.* Yellow Starwort, with large Daiſy-leaves, and an Aſphodel-root.

27. Helenium *perenne glabrum hyſſopifolium. Vaill. Mem.* Smooth perennial yellow Starwort, with an Hyſſop leaf.

28. Helenium *perenne glabrum, folio craſſo in ſummo tricuſpidato. Vaill. Mem.* Smooth perennial yellow Starwort, with a thick three-pointed Leaf.

29. Helenium *roriſmarini craſſis, obtuſis, confertiſque foliis. Vaill. Mem.* Yellow Starwort, with thick blunt Leaves growing in Cluſters, commonly called Golden Samphire.

30. Helenium *ſaxatile, hyſſopi folio villoſo & glutinoſo. Vaill. Mem.* Rock yellow Starwort, with an hairy clammy Hyſſop-leaf.

The firſt Sort is the true Elecampane, which is uſed in Medicine; it grows wild in moiſt Fields and Meadows in ſeveral Parts of *England*, and is pretty much cultivated in Gardens near *London*, to furniſh the Shops with the Roots; which is the only Part of the Plant in Uſe.

This Sort may be propagated by Seeds, or from ſmall Off-ſets, which are furniſhed with Buds on their Tops. If you would propagate it by Seeds, they ſhould be ſown on a moiſt Bed of light Earth ſoon after they are ripe; for if they are kept long out of the Ground, they will not ſucceed. Theſe Seeds generally remain in the Ground until the following Spring, when the Plants will begin to appear: at which time they muſt be carefully weeded, and if the Seaſon ſhould prove dry, they muſt be frequently watered; which will greatly promote their Growth. In this Bed the Plants ſhould remain till *Michaelmas* following; being careful to keep them conſtantly clear from Weeds during the Summer-ſeaſon. Then you ſhould prepare a Spot of Ground in proportion to the Number of Plants you have to tranſplant; which ſhould be well digged, and cleanſed from the Roots of all noxious Weeds; then you muſt carefully fork up the Roots of the ſeedling Plants, ſo as not to break them; and with a Dibble they ſhould be planted in Rows about a Foot aſunder, and nine Inches Diſtance in the Rows. In the planting theſe Roots, you muſt obſerve to make the Holes deep enough to receive them without being bent or broken, ſo that the Crown of the Roots may be juſt under the Surface of the Ground; then cloſe the Earth gently about them with your Feet. When the Plantation is finiſhed, there will be no farther Care required until the Spring, when the Plants begin to ſhoot; at which time the Ground ſhould be carefully hoed to clear it from Weeds; which Work muſt be repeated three or four times in the Spring, but always in dry Weather; which will intirely deſtroy the Weeds, if it be carefully performed; and when the Elecampane-plants have acquired Strength, they will keep the Weeds under; becauſe their Leaves, being large, will ſpread, and cover the Ground. If the Ground is good in which the Plants are placed, the Roots will be large enough to take up the *Michaelmas* following; but if the Ground is very poor, or too dry, they ſhould remain two Years after planting. before they are taken up for Uſe. *Note*, Theſe Roots ſhould not be taken up till the Leaves are decayed.

If you intend to propagate this Plant by Off-ſets, you muſt take them carefully off from the old Roots at *Michaelmas* (which is the time they are taken up for Uſe), ſo as to preſerve a good Bud to each Off-ſet; then plant them in a well-prepared Spot of Ground, in the ſame manner as hath been directed for the ſeedling Plants; and the following Summer they muſt be treated in the ſame manner as thoſe.

All theſe Plants are ranged under the Genus of *Aſter*, by Dr. *Tournefort*, as agreeing in the manner of their Flower and Seed with that Tribe: but as the Title of *Helenium* has been applied to the firſt Species by the Writers in Botany before his Time, and the outward Face of the the Plant being very different from the Starworts, as alſo the Flowers being yellow; Monſieur *Vaillant*, Profeſſor of Botany at *Paris*, has conſtituted a Genus by the Name of *Helenium*, and ſeparated all the Species which have yellow Flowers, from the *Aſters*, and placed them under this Genus; for which Reaſon I have added the *Engliſh* Name of *yellow Starwort* to all the Species.

The eleventh Sort, being very common by the Sides of Ditches and Ponds in moſt Parts of *England*, is ſeldom planted in Gardens; becauſe it creeps very much by the Root, and will ſoon overſpread a large Spot of Ground, when it has once taken Root. This Sort is commonly known by the Name of *Middle Fleabane*, in *England*.

The twenty-firſt Sort is alſo very common in *England*: this is an annual Plant, which ſows itſelf on moiſt Grounds, where the Water uſually ſtands in Winter: it flowers in *July* and *Auguſt*. This Plant is placed in the Catalogue of Simples annexed to the College-Diſpenſatory, under the Title of *Conyza minor, flore globoſo*: it is alſo called *Pulicaria*; becauſe, they ſay, the Smell of this Herb will drive away Fleas.

The twenty-ninth Sort grows on the Rocks and gravelly Shores by the Sea-ſide, in divers Parts of *England*; and is frequently gathered, and brought to the Markets for Samphire, and pickled as ſuch. This is often diſtinguiſhed from the true Samphire, by the Title of Golden Samphire, becauſe the Flowers are yellow.

The other Sorts are not Natives of this Country, but are all of them hardy enough to thrive in the open Air; and ſeveral of them will grow in ſhady Places, and under the Drip of Trees; ſo that they deſerve to be propagated in the *Engliſh* Gardens. They are commonly propagated by parting their Roots, becauſe they ſeldom produce good Seeds in this Country. The beſt time to part their Roots is in Autumn, when their Stalks begin to decay: in doing this, you ſhould be careful not to divide them too ſmall, as alſo to preſerve ſome good Buds to each Off-ſet. Theſe ſhould be planted in large Borders in the Pleaſure-garden, intermixed with other hardy perennial Plants; where they will require no other Culture, but to keep them clear from Weeds, and to tranſplant the Roots every other Year, when they may be parted to increaſe them. In the Summer-time, when the Stalks are grown pretty high, they ſhould have Sticks thruſt into the Ground by each Root, and their Branches faſtened thereto with Baſs, to ſupport them; otherwiſe they are often broken down by heavy Rains, or ſtrong Winds, when they are in Flower; which renders them very unſightly in a neat Garden. Some of theſe Sorts begin to flower in *July*, and others ſucceed them, until the Froſts in Autumn put a Stop to their Flowering.

If theſe Plants are propagated by Seeds, they ſhould be ſown ſoon after they are ripe, in an open Bed of freſh Earth; for if the Seeds are kept out of the Ground till Spring, they ſeldom grow.

HELIANTHEMUM, Dwarf Ciſtus, or the little Sun-flower.

The *Characters* are;

The Flower-cup conſiſts of three Leaves: the Flower, for the moſt part, conſiſts of five Leaves, which are placed orbicularly, and expand in form of a Roſe: the Pointal of the Flower becomes a globular Fruit, which divides into three Parts, having three Cells, which are filled with roundiſh Seeds fixed to ſmall Capillaments.

The *Species* are;

1. HELIANTHEMUM *vulgare, flore luteo. J. B.* Common Dwarf Ciſtus, with a yellow Flower.

2. HELIANTHEMUM *vulgare, flore dilutiore. Tourn.* Common Dwarf Ciſtus, with a fainter Flower.

3. HELIANTHEMUM *Alpinum, folio piloſellæ minoris Fuchſii. J. B.* Hoary Dwarf mountain Ciſtus, with Cat's-foot leaves.

4. HELIANTHEMUM *montanum, polii folio. Pluk.* Mountain Dwarf Ciſtus, with Poley-mountain-leaves.

5. HELIANTHEMUM *foliis majoribus, flore albo. J. B.* Great-leav'd Dwarf Ciſtus, with a white Flower.

6. HELIANTHEMUM *album Germanicum. Tab. Icon.* White *German* Dwarf Ciſtus.

7. HELIANTHEMUM *flore albo, folio anguſto hirſuto. J. B.* White flowered Dwarf Ciſtus, with narrow hairy Leaves.

8. HELIANTHEMUM *ſaxatile, foliis & caulibus incanis oblongis, floribus albis Apennini montis. Mentz.* Rock Dwarf Ciſtus of the *Apennines*, with hoary oblong Leaves and Stalks, and white Flowers.

9. HELIANTHEMUM, *ſive Ciſtus humilis, folio ſampſuchi, capitulis valde hirſutis. J. B.* Dwarf Ciſtus, with a Marjoram-leaf, and very hairy Heads.

10. HELIANTHEMUM *folio thymi, floribus umbellatis. Tourn.* Dwarf Ciſtus, with a Thyme-leaf, with Flowers growing in an Umbel.

11. HELIANTHEMUM *polii folio ampliore, Luſitanicum. Tourn. Portugal* Dwarf Ciſtus, with large Poley-mountain-leaves.

12. HELIANTHEMUM *Germanicum luteum, ciſti folio. Boerh. German* Dwarf Ciſtus, with a yellow Flower, and Ciſtus-leaf.

13. HELIANTHEMUM *ſalicis folio. Tourn.* Dwarf Ciſtus, with a Willow-leaf.

14. HELIANTHEMUM *ledi folio. Tourn.* Dwarf Ciſtus, with a Ledum-leaf.

15. HELIANTHEMUM *flore maculoſo. Col.* Dwarf Ciſtus, with ſpotted Flowers.

16. HELIANTHEMUM *vulgare, flore albo. Tourn.* Common ſmall Sun-flower, with a white Flower.

17. HELIANTHEMUM *ſerpilli folio, flore minore aureo odorato. Tourn.* Small Sun-flower, with a Mother-of-thyme-leaf, and a ſmaller golden ſweet-ſmelling Flower.

18. HELIANTHEMUM *anguſtifolium luteum. Tourn.* Yellow narrow-leav'd ſmall Sun-flower.

19. HELIANTHEMUM *foliis myrti minoris, ſubtus incanis. Tourn.* Small Sun-flower, with leſſer Myrtle-leaves, which are hoary underneath.

20. Helianthemum *tenuifolium glabrum erectum, luteo flore. Tourn.* Narrow-leav'd ſmooth upright ſmall Sun-flower.

21. Helianthemum *tenuifolium glabrum, luteo flore, per humum ſparſum. J. B.* Narrow-leav'd ſmooth ſmall Sun-flower, ſpreading on the Ground, with a yellow Flower.

22. Helianthemum *folio thymi incano. J. B.* Small Sun-flower, with an hoary Thyme-leaf.

23. Helianthemum *thymi folio glabro. Tourn.* Small Sun-flower, with a ſmooth Thyme-leef.

24. Helianthemum *ad nummulariam accedens, J. B.* Small Sun-flower, reſembling Moneywort.

25. Helianthemum *foliis roriſmarini ſplendentibus, ſubtus incanis. Tourn.* Small Sun-flower, with ſhineing Roſmary-leaves, hoary underneath.

26. Helianthemum *Maſſilienſe, coridis folio. Tourn.* Small Sun-flower of *Marſeilles*, with a fair low Heath-pine-leaf.

27. Helianthemum *polii folio ampliore, Luſitanicum. Tourn. Portugueſe* ſmall Sun-flower, with a larger Mountain-poley-leaf.

28. Helianthemum *polii folio anguſtiore, Luſitanicum. Tourn. Portugueſe* ſmall Sun-flower, with a narrow Poley-mountain-leaf.

29. Helianthemum *humilius Luſitanicum, halimi folio nigriore, magno flore luteo. Tourn.* Low *Portugueſe* ſmall Sun-flower, with a black Sea-purſlain-leaf, and a large yellow Flower.

30. Helianthemum *Algarvienſe, halimi folio, flore luteo punicante macula inſignito. Tourn.* Small Sun-flower of *Algarve*, with a Sea-purſlain-leaf, and a yellow Flower ſpotted with Scarlet.

31. Helianthemum *Hiſpanicum, halimi folio rotundiore. Tourn. Spaniſh* ſmall Sun-flower, with a round Sea-purſlain-leaf.

32. Helianthemum *Hiſpanicum, halimi folio anguſtiore. Tourn. Spaniſh* ſmall Sun-flower, with a narrow Sea-purſlain-leaf.

33. Helianthemum *Hiſpanicum, halimi folio minimo. Tourn. Spaniſh* ſmall Sun-flower, with the leaſt Sea-purſlain-leaf.

34. Helianthemum *Luſitanicum, mari folio incano, flore luteo. Tourn. Portugueſe* ſmall Sun-flower, with an hoary Marum-leaf, and a yellow Flower.

35. Helianthemum *Luſitanicum, mari folio incano, capitulis valde hirſutis. Tourn. Portugueſe* ſmall Sun-flower, with an hoary Marum-leaf, and very hairy Seed-veſſels.

36. Helianthemum *Luſitanicum, majoranæ folio, flore luteo punicante macula inſignito. Tourn. Portugueſe* ſmall Sun-flower, with a Marjoram-leaf, and a yellow Flower ſpotted with Scarlet.

37. Helianthemum *Hiſpanicum, halimi folio ampliſſimo, incano, & nervoſo. Tourn. Spaniſh* ſmall Sun-flower, with a very large hoary ribbed Leaf.

38. Helianthemum *Hiſpanicum, anguſto folio, flore carneo. Tourn. Spaniſh* ſmall Sun-flower, with a narrow Leaf, and a carnation Flower.

39. Helianthemum *Alpinum, oleæ folio, ſubtus incano. Tourn.* Small Sun-flower of the *Alps*, with an Olive-leaf, hoary underneath.

40. Helianthemum *Luſitanicum, folio bupleuri, flore maculato. Tourn. Portugueſe* ſmall Sun-flower, with an Hares-ear-leaf, and a ſpotted Flower.

41. Helianthemum *Luſitanicum, globulariæ folio. Tourn. Portugueſe* ſmall Sun-flower, with a Daiſy-leaf.

42. Helianthemum *Hiſpanicum, origani folio, ſubtus incano. Tourn.* *Spaniſh* ſmall Sun-flower, with an Origany-leaf, hoary underneath.

43. Helianthemum *plantaginis folio, perenne. Tourn.* Perennial ſmall Sun-flower, with a Plantain-leaf.

44. Helianthemum *Hiſpanicum, folio minimo rotundiore. Tourn.* *Spaniſh* ſmall Sun-flower, with a very ſmall round Leaf.

45. Helianthemum *Hiſpanicum, ocymi folio, ſubtus incano. Tourn.* *Spaniſh* ſmall Sun-flower, with a Baſil-leaf, hoary underneath.

46. Helianthemum *pumilum, portulacæ marinæ folio argenteo. Tourn.* Dwarf ſmall Sun-flower, with a ſilvery Sea-purſlain-leaf.

47. Helianthemum *Creticum, linariæ folio, flore croceo. Tourn. Cor.* *Candy* ſmall Sun-flower, with a Toad-flax-leaf, and a ſaffron Flower.

48. Helianthemum *Creticum annuum, lato plantaginis folio, flore aureo. Tourn. Cor.* Annual *Candy* ſmall Sun-flower, with a broad Plantain-leaf, and a golden Flower.

49. Helianthemum *Luſitanicum annuum, plantaginis folio, flore tricolore. Tourn.* Annual *Portugueſe* ſmall Sun-flower, with a Plantain-leaf, and a three-colour'd Flower.

50. Helianthemum *fruteſcens, folio majoranæ incano. Tourn.* Shrubby ſmall Sun-flower, with an hoary Marjoram-leaf.

51. Helianthemum *halimi folio breviore obtuſo. Tourn.* Small Sun-flower, with a ſhorter blunt Sea-purſlain-leaf.

52. Helianthemum *folio halimi latiore mucronato. Tourn.* Small Sun-flower, with a broader ſharp-pointed Leaf.

53. Helianthemum *Americanum fruteſcens, portulacæ folio. Plum. Cat.* Shrubby *American* ſmall Sun-flower, with a Purſlain-leaf.

The four firſt Sorts are found wild in ſeveral Parts of *Great Britain*; but the firſt is the moſt common of them all, and is found upon the Sides of dry Banks, and chalky Hills, in divers Parts of *England*. The twelve firſt Species are perennial Plants, which grow woody, but of low Stature, ſeldom riſing above a Foot high; the Branches, for the moſt part, trailing upon the Ground. Theſe Plants are very ornamental to a Garden, eſpecially if planted in a warm Poſition, and a dry Soil, where they will thrive and flower exceedingly; and are very proper to plant in ſloping Borders, or little Declivities, where few other Plants will thrive to Advantage: and altho' the Flowers of theſe Plants are of no great Beauty, yet the vaſt Quantities which are produced all over the Plants, for two Months together, render them worthy of a Place in every good Garden.

The ſixteenth Sort is ſometimes found wild in *England*, and is only a Variety of the common Sort, differing merely in the Colour of the Flower.

The twenty-ſeven Sorts next following grow wild in *Portugal*, *Spain*, the South of *France*, and the *Alps*. Theſe are all of them abiding Plants, which may be propagated by Seeds, in the manner before directed: and if they are planted on a warm Border, or on a ſloping Bank, which is expoſed to the South, they will live in the open Air in this Country very well. As theſe Plants require very little Trouble to cultivate them, they merit a Place in every large Garden; where, if they are properly diſpoſed, they will afford an agreeable Variety.

Theſe Plants ſhould not be planted in a rich Soil; for they naturally grow on chalky Hills, or ſtony and gravelly Places, where they flower much better, and the Plants will continue longer, than when they grow in a rich Earth. As all theſe Plants are of humble Growth, and ſpread their Branches near the Ground; ſo they ſhould not be placed among tall-growing Plants, which will overbear them; nor ſhould large Weeds be permitted to remain amongſt them, becauſe they will greatly weaken the Plants, and prevent their flowering.

Theſe are all propagated by Seeds (which the Plants annually furniſh in great Plenty); and ſhould be ſown in a warm Border of freſh light Earth in *March*, or the Beginning of *April*; and when the Plants are come up, they may be tranſplanted into Beds of the like Earth about four Inches aſunder, or ſomewhat more; in which Place they may remain until *September*, when they ſhould be removed to the Places where they are to continue for good, obſerving to take them up with a good Ball of Earth to their Roots, otherwiſe they are ſubject to miſcarry.

They may alſo be propagated by planting Cuttings of any of the Sorts in *May*, in a Bed of freſh light Earth, obſerving to water and ſhade them until they have taken Root: theſe alſo may remain in the Beds until *September*, when they ſhould be planted out, as was directed for the ſeedling Plants: but as they generally produce great Quantities of Seeds every Year, there will ſeldom be Occaſion for propagating them any other way: becauſe the ſeedling Plants are generally better than thoſe obtained from Cuttings; and it being more Trouble to propagate them by Cuttings, few People practiſe that Method.

The thirteenth, fourteenth, fifteenth, forty-ſeventh, and forty-eighth Sorts are annual Plants, and muſt be ſown every Year, or the Seeds ſuffered to fall; which, if the Ground be clear from Weeds, will come up, and abide the Winter, and flower early in the ſucceeding Summer; which is the ſureſt Method to obtain large Plants, eſpecially of the fifteenth Sort, of which if the Seeds are ſown in the Spring, the Plants are apt to be very ſmall, and produce but few Flowers; and many times the Seeds will not come up at all; ſo that if you ſow them, it ſhould be done ſoon after they are ripe: the Flowers of this laſt Sort are very beautiful, each Petal or Leaf having a deep-purple Spot at the Bottom; and ſince it is a Plant which requires but very little Care, it is well worth keeping in a Garden.

The forty-ninth, fiftieth, and fifty-firſt Sorts are ſhrubby Plants, which riſe to the Height of four or five Feet: theſe are preſerved in Pots, and removed into the Green-houſe in Winter, being too tender to live in the open Air in this Country throughout the Year. They are uſually propagated by Cuttings, becauſe they ſeldom perfect Seeds in *England*: the beſt time to plant the Cuttings is in the Middle or latter End of *June*, after the Plants have have been expoſed in the open Air a ſufficient time to harden the Shoots; for if they are taken off ſoon after the Plants are removed out of the Green-houſe, the Shoots are generally too weak to make Cuttings. They ſhould be planted in a ſhady Border of light Earth, and frequenly refreſhed with Water: in about two Months the Cuttings will be ſufficiently

ciently rooted to tranſplant, when they ſhould be carefully taken up with Balls of Earth to their Roots, and each planted in a ſeparate ſmall Pot filled with freſh light Earth, and placed in a ſhady Situation, until they have taken new Root; after which time they may be placed amongſt other hardy Exotic Plants in a ſheltered Situation; where they may remain until the Middle of *October*, when they muſt be removed into the Green-houſe: during the Winter-ſeaſon theſe Plants ſhould have as much free Air as poſſible in mild Weather, and will require to be often watered; and in the Summer-ſeaſon they muſt be removed into the open Air, and placed with other hardy Exotic Plants, ſuch as Myrtles, Geraniums, *&c.* where they may be defended from ſtrong Winds; and in hot dry Weather, they muſt be plentifully watered: with this Management the Plants will thrive, and in *June*, *July*, and *Auguſt*, they will flower, at which time they will make a pretty Appearance among other Exotic Plants.

The fifty-ſecond Sort is much more tender than either of the former, being an Inhabitant of the warmeſt Parts of *America*. This was diſcovered by Father *Plumier*, in the *French* Settlements; and in the Year 1731. I had the Seeds of this Plant ſent me by the late Dr. *William Houſtoun*, from *La Vera Cruz*. This Sort grows about two Feet and an half, or three Feet high, and divides into many ſucculent Branches, which are beſet with thick ſucculent Leaves, ſomewhat reſembling thoſe of Purſlain: on the Top of the Branches is ſent forth a ſlender Stalk about a Foot long, which is garniſhed with beautiful ſcarlet Flowers, growing in a Spike; theſe Flowers are ſucceeded by tricapſular Seed-veſſels, which are full of ſmall Seeds.

This Sort, which was firſt procured by Seeds from abroad, has been ſince propagated by Cuttings, and diſperſed into ſeveral Parts of *Europe*. The beſt Seaſon for planting of theſe Cuttings is in *July*; but they ſhould be cut from the Plant, and laid to dry, four or five Days before they are planted, otherwiſe they are very ſubject to rot. Theſe Cuttings ſhould be planted in Pots filled with freſh light ſandy Earth, and plunged into a moderate Hot-bed, being careful to ſhade them from the Sun in the Heat of the Day, as alſo to refreſh them now-and-then with a little Water; but they muſt not be kept too moiſt, leſt that ſhould rot them. With this Management the Cuttings will take Root in about a Month, when they may be expoſed to the Sun, giving them a proportionable Quantity of Air; but they ſhould remain in the Bed till the latter End of *September*, when they ſhould be removed into the dry Stove, and placed in the warmeſt Part, where they may have Sun and Heat. During the Winter-ſeaſon they ſhould be ſparingly watered; but in Summer they ſhould have a greater Share, as alſo a large Quantity of freſh Air; but they muſt conſtantly remain in the Stove.

HELIANTHUS, *i. e.* Sunflower.

This Genus of Plants was titled *Corona Solis*, by moſt of the Botanic Writers; but this being a compound Name, Dr. *Linnæus* has altered it to this of *Helianthus*: it has alſo by ſome been titled *Heliotropium*; which Name is now applied to another Genus of Plants, very different from this.

The *Characters* are;

The Empalement of the Flower is ſcaly; the Scales lying over each other as Tiles on an Houſe: the Flower is radiated: the outward Rays are Female: but thoſe in the Diſk are Hermaphrodite Flowers: theſe are tubulous, and ſit on the Top of the Ovary, which is crowned with two ſmall Leaves: the Ovary afterward becomes an oblong blunt angular Seed, each reſting in a ſeparate Cell; ſo that when the Seeds are thruſt out, the Vacuities have the Appearance of an Honeycomb.

The *Species* are;

1. HELIANTHUS *radice annua. Lin. Vir.* The annual Sun-flower.

2. HELIANTHUS *radice tereti inflexa perenni. Lin. Hort. Cliff.* The common perennial or everlaſting Sun-flower.

3. HELIANTHUS *radice fuſiformi. Lin. Hort. Cliff.* Tall broad-leav'd perennial Sun-flower.

4. HELIANTHUS *foliis ovatis acuminatis ſerratis, pedunculis longiſſimis. Flor. Virg.* Sun-flower with oval pointed, and ſawed Leaves, having long Footſtalks.

5. HELIANTHUS *foliis ovatis crenatis trinerviis ſcabris, ſquamis calycinis erectis, longitudine diſci. Flor. Virg* Sun-flower with oval crenated rough Leaves, having three Veins, and a ſcaly Flower-cup.

6. HELIANTHUS *foliis lanceolatis ſeſſilibus. Flor. Virg.* Sun-flower with ſpear ſhaped Leaves growing cloſe to the Stem.

7. HELIANTHUS *foliis oblongo-ovatis ſcabris, radice repente.* Sun-flower with oblong oval rough Leaves, and a creeping Root.

8. HELIANTHUS *radice tuberoſa. Lin. Hort. Cliff.* Sun flower with a tuberous Root, commonly called *Jeruſalem* Artichoke.

All theſe Species of Sun-flowers are Natives of *America*, from whence we are often ſupplied with new Kinds, it being a large Genus of Plants: and it is very remarkable, that there is not a ſingle Species of this Genus that is *European*; ſo that before *America* was diſcovered, we were wholly unacquainted with theſe Plants. But although they are not originally of our own Growth; yet are they become ſo familiar with our Climate, as to thrive and increaſe full as well as if they were at Home (ſome of the very late-flowering Kinds excepted, which require a longer Summer than we generally enjoy, to bring them to Perfection): and many of them are now ſo plentiful in *England*, that Perſons unacquainted with the Hiſtory of theſe Plants would imagine them at leaſt to have been Inhabitants of this Iſland many hundred Years; particularly the *Jeruſalem* Artichoke, which, though it doth not produce Seeds in our Climate, yet doth ſo multiply by its knobbed Roots, that, when once well fixed in a Garden, it is not eaſily to be rooted out.

The firſt Sort, being annual, muſt be ſown every Spring, in a Bed of good light rich Earth; and when the Plants are come up about three Inches high, they muſt be tranſplanted into Nurſery-beds at about eight or ten Inches Diſtance every Way, where they may continue until they are a Foot high, when they muſt be carefully taken up with a Ball of Earth, and tranſplanted into the Middle of large Borders, or intermixed in Boſquets of large-growing Plants, obſerving to water them until they are well rooted; after which they will require no further Care but to clear them from Weeds.

In *July* the great Flowers upon the Tops of the Stems will appear; among which, the beſt and moſt double Flowers of each Kind ſhould be preſerved for Seeds; for thoſe which flower later upon the Side-branches are neither ſo fair, nor do they perfect their Seeds ſo well, as thoſe which are firſt in Flower: when the Flowers are quite faded, and the Seeds are formed, you ſhould carefully guard the Heads from the Sparrows, which will otherwiſe devour moſt of the good Seeds; and about the Beginning of *October*, when the Seeds are ripe, you ſhould cut off the Heads with a ſmall Part of the Stems, and hang them up in a dry airy Place for about a Month; by which time the Seeds will be perfectly dry and hard; when you may eaſily rub them out, and put them up in Bags, or Papers, preſerving them from Vermin until the Seaſon for ſowing them.

There are ſeveral Varieties of this Sort, which differ in the Colour of their Flowers, as alſo their Seeds; ſome of them having Flowers of a Sulphur-colour, others yellow, ſome pale, and others deep: the Seeds of ſome are black, others Aſh-colour, and ſome ſtriped; and of all theſe Varieties, there are ſome with very double, and others ſingle Flowers: but as theſe are very apt to ſport, and vary from the Sorts ſown, they ſhould not be deemed as diſtinct Species: the double Flowers ſhould be preferred for the ſaving of the Seeds; becauſe moſt of the Plants which are produced from theſe Seeds, will have double Flowers.

The Seeds of this Sort of Sunflower are excellent Food for domeſtic Poultry; therefore, where a Quantity of it can be ſaved, it will be of great Uſe, where there are Quantities of theſe Fowls.

The other perennial Sorts rarely produce Seeds in *England*; but moſt of them increaſe very faſt at their Roots, eſpecially the common and creeping-rooted Kinds. The ſecond Sort, which is the moſt common in the *Engliſh* Gardens, is the largeſt and moſt valuable Flower, and is a very proper Furniture for large Borders in great Gardens, as alſo for Boſquets of large-growing Plants, or to intermix in ſmall Quarters with Shrubs, or in Walks under Trees, where few other Plants will thrive: it is alſo a great Ornament to Gardens within the City; where it doth grow, in Defiance of the Smoke, better than moſt other Plants; and for its long Continuance in Flower, deſerves a Place in moſt Gardens, for the ſake of its Flowers for Baſons, &c. to adorn Halls and Chimneys in a Seaſon when we are at a Loſs for other Flowers. It begins flowering in *June*, and continues until *October*.

The third, fourth, fifth, ſixth, and ſeventh Sorts may alſo have a Place in ſome abject Part of the Garden, for the Variety of their Flowers; which, though not ſo fair as thoſe of the common Sort, yet will add to the Diverſity; and as many of them are late Flowerers, ſo we may continue the Succeſſion of Flowers longer in the Seaſon.

Theſe Sorts are all of them very hardy, and will grow in almoſt any Soil or Situation; they are propagated by parting their Roots into ſmall Heads, which in one Year's time will ſpread and increaſe greatly. The beſt Seaſon for this Work is in the Middle of *October*, ſoon after their Flowers are paſt, or very early in the Spring, that they may be well rooted before the Droughts come on; otherwiſe their Flowers will be few in Number, and not near ſo fair, and by this means their Roots will be weak; but if they are planted in *October*, you will ſave the Trouble of watering them; their Roots being ſurely fixed before the dry Weather, they will need no other Trouble than to clear them from Weeds.

The *Jeruſalem* Artichoke is propagated in many Gardens for the Roots, which are by ſome People as much eſteemed as Potatoes; but they are more watry and flaſhy, and are very ſubject to trouble the Belly by their windy Quality, which hath brought them almoſt into Diſuſe.

Theſe are propagated by planting the ſmaller Roots, or the larger ones cut into Pieces, obſerving to preſerve a Bud to each ſeparate Piece, either in the Spring or Autumn, allowing them a good Diſtance; for their Roots will greatly multiply: the Autumn following, when their Stems decay, the Roots may be taken up for Uſe. Theſe ſhould be planted in ſome remote Corner of the Garden; for they are very unſightly while growing, and their Roots are apt to over-run whatever grows near them; nor can they be eaſily deſtroyed when they are once well fixed in a Garden.

HELIOTROPIUM, Turnſole.

The *Characters* are;

The Flower conſiſts of one Leaf, and is ſhaped like a Funnel, having its Centre wrinkled and folded, and its Brim cut into ten Segments, alternately unequal: theſe Flowers are collected into a long reflexed Spike, reſembling a Scorpion's Tail: each Flower is ſucceeded by four naked gibboſe Seeds.

The *Species* are;

1. HELIOTROPIUM *majus Dioſcoridis. C. B.* The great Turnſole of *Dioſcorides*.

2. HELIOTROPIUM *Americanum cæruleum, foliis hormini. Acad. Reg. Sc.* Blue *American* Turnſole, with Clary-leaves.

3. HELIOTROPIUM *Americanum cæruleum, foliis hormini anguſtioribus. H. L.* Blue *American* Turnſole, with narrower Clary-leaves.

4. HELIOTROPIUM *arboreſcens, foliis teucrii, flore albo in capitula denſa congeſto. Boerh. Ind.* Tree-like Turnſole, with a Germander-leaf, and white Flowers growing in thick ſhort Heads.

5. HELIOTROPIUM *Canarienſe arboreſcens, folio ſcorodoniæ. Hort. Amſt.* *Canary* Tree-like Turnſole, with a Wood-ſage-leaf.

The firſt, ſecond, and third Kinds are annual Plants: the firſt is very hardy, and may be preſerved in a Garden, by ſuffering the Seeds to fall when ripe, which will come up in the ſucceeding Spring much better than when preſerved and ſown with Care; for it rarely happens, that thoſe which are ſown in the Spring grow; ſo that if it be intended to be had in a different Place from that where the Plants grew the preceding Year, the Seeds ought to be ſown ſoon after they are ripe; which ſhould be in the Place where they are to remain; for theſe Plants ſeldom thrive well when tranſplanted, eſpecially if it be not performed while the Plants are young.

This Plant produces its Flowers in *June*, and the Seeds ripen in *Auguſt*

The ſecond and third Sorts muſt be ſown upon an Hot-bed in the Spring, and managed as was directed for the *Cyanus Turcicus* (to which the Reader is deſired to turn, to ſave Repetition); for if they are not brought forward in the Spring, they ſeldom perfect their Seeds: there is no great Beauty in theſe two Plants, nor are they often cultivated but in Botanic Gardens for Variety-ſake.

The fourth and fifth Sorts grow to be large ſhrubby Plants: theſe are propagated by planting Cuttings of them, in any of the Summer-months, in a Bed of light Earth, obſerving to ſhade and water them until they have taken Root; and in *Auguſt* they ſhould be tranſplanted into Pots filled with freſh light Earth, which ſhould be placed in a ſhady Situation until the Plants are rooted in the Pots; when they may be removed into the open Air amongſt Myrtles, Jaſmines, *&c.* where they may remain until *October*; at which time they ſhould be removed into the Green-houſe, where they ſhould be placed ſo as to have as much free Air as poſſible, and will require frequent Waterings.

The fifth Sort produces Flowers every Summer: but I have never yet ſeen any on the fourth Sort, altho' it is by much the larger Plant. Theſe two Species are confounded together by ſome late Authors.

HELLEBORE. *Vide* Helleborus.

HELLEBORINE, Baſtard Hellebore.

The *Characters* are;

It hath a fibroſe Root: the Leaves are broad and nervous, ſomewhat like thoſe of the White Hellebore: the Flowers, which grow upon a ſhort Footſtalk, are collected into a Spike, each conſiſting of ſix diſſimilar Leaves: the Ovary becomes a Fruit very like that of the Orchis.

The *Species* are;

1. HELLEBORINE *latifolia montana.* C. B. P. Common Baſtard Hellebore.

2. HELLEBORINE *altera, atrorubente flore.* C. B. P. Baſtard Hellebore, with a blackiſh Flower.

3. HELLEBORINE *flore albo. Ger.* White flower'd Baſtard Hellebore.

4. HELLEBORINE *flore rotundo, ſive Calceolus.* C. B. P. Lady's-ſlipper.

5. HELLEBORINE *Virginiana, flore rotundo luteo. Baniſter. Virginian* Lady's-ſlipper, with a yellow Flower.

6. HELLEBORINE *Canadenſis, ſive Calceolus Mariæ. Icon. Robert. Canada* Lady's-ſlipper.

7. HELLEBORINE *latifolia, flore albo clauſo. Raii Syn.* Broad-leav'd Baſtard Hellebore, with a white ſhut Flower.

8. HELLEBORINE *foliis prælongis anguſtis acutis. Raii Syn.* Baſtard Hellebore, with longer narrow-pointed Leaves.

9. HELLEBORINE *paluſtris noſtras. Raii Syn.* Marſh Baſtard Hellebore.

10. HELLEBORINE *montana anguſtifolia purpuraſcens.* C. B. P. Narrow-leav'd purple mountain Baſtard Hellebore.

11. HELLEBORINE *Virginiana, ophioglosſi folio. D. Baniſter.* Baſtard Hellebore of *Virginia*, with an Adder's-tongue leaf.

12. HELLEBORINE *Mariana, bupleuri anguſtiſſimo folio, purpuraſcente flore, caule aphyllo. Pluk.* Baſtard Hellebore of *Maryland*, with a very narrow Leaf, like that of Hare's-ear, a purpliſh Flower, and a Stalk without a Leaf.

13. HELLEBORINE *Mariana, flore pallide purpureo, trianthophoros. Pluk. Mantiſſ.* Baſtard Hellebore of *Maryland*, with pale-purple Flowers, growing three on a Stalk.

14. HELLEBORINE *Mariana monanthos, flore longo purpuraſcente liliaceo. Pluk. Mantiſſ.* Baſtard Hellebore of *Maryland*, with one long purpliſh lily-ſhaped Flower.

15. HELLEBORINE *Virginiana, flore rotundo magno ex purpureo albicante. Baniſt. Cat.* Baſtard Hellebore of *Virginia*, with a large round Flower of a purpliſh-white Colour.

16. Helleborine *foliis liliaceis, aſphodeli radice. Plum. Cat.* Baſtard Hellebore of *America*, with Leaves like the Lily, and an Aſphodel-root.

17. Helleborine *purpurea, tuberoſa radice. Plum. Cat.* Purple Baſtard Hellebore, with a tuberoſe Root.

18. Helleborine *Americana, foliis longiſſimis, tuberoſa radice. American* Baſtard Hellebore, with very long Leaves, and a tuberoſe Root, commonly called, the Flower of the Holy Ghoſt.

19. Helleborine *graminea, foliis rigidis carinatis. Plum. Cat.* Graſs-like Baſtard Hellebore, with ſtiff Leaves.

Theſe are all Natives of Woods, and ſhady Places: the four firſt-mentioned, as alſo the ſeventh, eighth, and ninth Sorts, grow wild in the Woods of *Yorkſhire*, *Lancaſhire*, and many Parts of *England*: the tenth Sort has been found in *Ireland*, and is pretty common in other Parts of *Europe*.

The fourth Sort is by much the moſt beautiful of all the *European* Kinds, as it is alſo the moſt ſcarce, being rarely to be found in any of the Gardens in the South; for this is an Inhabitant of the Northern Counties. I found this Sort growing wild in the Park at *Burrough-Hall* near *Kirby-Lonſdale*, the Seat of *Robert Fenwick*, Eſq; Theſe may be tranſplanted into Gardens, from the Places of their natural Growth; either in the Spring, ſoon after they appear above-ground, or in Autumn, when their Leaves begin to decay; but if they are tranſplanted in Spring, there ſhould be great Care had, to preſerve a large Ball of Earth to their Roots, otherwiſe they will not ſucceed. Theſe Plants ſhould be planted in ſhady moiſt Places, and in a ſtrong undunged Soil, where they will continue many Years, and produce their Flowers toward the latter Part of Summer.

The fifth, ſixth, eleventh, twelfth, thirteenth, fourteenth, and fifteenth Sorts are Natives of *Virginia*, *Maryland*, and *New-England*; from which Places ſome of their Roots have been brought into *England*. The beſt Method to obtain theſe Kinds is, to procure ſome of their Roots to be taken up with Balls of Earth, and planted into Tubs of the natural Soil in which they grew, as cloſe together as poſſible: theſe Tubs ſhould remain in the Country, until the Leaves of the Plants begin to decay, when they may be put on board the Ships, and ſent over; for as the Roots will then be in a State of Inaction, ſo they will be in leſs Danger of ſuffering in their Paſſage, than if they were in a vigorous growing State, and will require very little, if any Water. Theſe Plants may be planted out of the Boxes into ſmall Wilderneſs-quarters, where they will abide the Cold of the Winter very well, and produce their Flowers in Summer.

The ſixteenth, ſeventeenth, and nineteenth Sorts were diſcovered by Father *Plumier*, in the *French* Settlements in *America*; theſe three Sorts were ſent by the late Dr. *William Houſtoun* from *Jamaica*, where they grow in the Woods, and ſhady Places, in great Plenty. The ſeventeenth Sort was alſo ſent from the *Bahama* Iſlands to Mr. *Peter Collinſon*, and hath been ſince diſtributed to many curious Perſons in *England*. This is a very fine Plant, and deſerves a Place in the Stove, becauſe it produces a moſt beautiful Spike of purple Flowers every Year. This and the ſixteenth and nineteenth Sorts are propagated by Off-ſets, which they ſend forth plentifully. The beſt Seaſon for tranſplanting the Roots, and taking off the Off-ſets, is in the Beginning of *February*, juſt before they begin to ſhoot. Theſe Roots ſhould be planted in Pots filled with rich light Earth, and then plunged into the Tan in the Stove, obſerving now-and-then to refreſh the Earth with Water, which muſt not be given to them in great Quantities until they have ſent forth their Leaves; for too much Moiſture will rot theſe Roots while they are in an unactive State. Theſe Plants ſhould conſtantly be kept in the Bark-bed in the Stove, otherwiſe they will not flower. During the Summer-ſeaſon they will require a larger Share of Moiſture, and in hot Weather they ſhould have plenty of freſh Air; but in Winter they muſt be kept warm, otherwiſe the Roots will periſh. With this Management the Plants will thrive exceedingly, and produce their beautiful Flowers in *Auguſt* and *September*. The Roots of theſe Plants ſhould not be diſturbed in Winter; for although their Leaves decay in Autumn, and their Roots remain inactive, yet if they are taken up, and kept out of the Ground, they are very apt to ſhrink, unleſs great Care be taken of them. The ſeventeenth Sort was by Accident procured in *England*, the Root being ſent over with a Specimen of the Plant, which was dried, and ſent to Mr. *Collinſon*; he took off the Root, and had it planted in the Stove at Sir *Charles Wager*'s Garden: it grew and flowered; from which Root there has been a great Number produced. This Sort produces a Spike of Flowers near two Feet long, which, being of a bright purple Colour, make a fine Appearance in the Stove.

The eighteenth Sort grows in great Plenty on the Sides of the Road between *Porto Bello* and *Panama*, in the *Spaniſh Weſt-Indies*, in ſhady Places, and on a ſtony Soil. The *Spaniards* ſay, it is only to be found in this Place; and that it cannot be tranſplanted to any other Part of the Country, ſo as to grow. The Flowers of the Plant reſemble a Dove; from whence the *Spaniards* give it the Name of the Holy Ghoſt. Some of theſe Roots were ſent to *England* by Mr. *Robert Millar*, Surgeon, who was on the Spot where they grew: ſome of which are yet alive in *England*; but have not as yet produced any Flowers. This and the nineteenth Sort are both very tender Plants; wherefore if they are brought into *England*, they muſt be very gently treated: their Roots ſhould be planted in Pots filled with a ſandy Soil mixed with Lime-rubbiſh, and then plunged into an Hot-bed of Tanners Bark, being careful not to give them much Water until they begin to ſhoot; after which time they ſhould be frequently watered. During the Summer-ſeaſon theſe Plants muſt have freſh Air admitted to them; but in Winter they muſt have a very warm Situation. They put forth their green Leaves in *May*, which continue till Autumn, when they decay; ſo that the Roots remain inactive about ſix Months.

There are many other Sorts of theſe Plants, which are Natives of *America*; but the greater Part of them, growing on Trees, cannot be cultivated in Gardens; wherefore it is needleſs to enumerate them in this Place.

HELLEBOROIDES HYEMALIS. *Vide* Helleborus.

HELLEBORO-RANUNCULUS. *Vide* Helleborus.

HELLEBORUS, Black Hellebore, or Chriſtmas-flower.

The *Characters* are;

It hath a digitated Leaf: the Flower conſiſts of ſeveral Leaves, which are placed orbicularly, and expand in form of a Roſe: in the Centre of the Flower riſes the Pointal, which is encompaſſed about the Baſe with ſeveral little Horns lying between the Chives and Petals, which afterward turn to a Fruit, in which the membraneous Huſks are gathered, as it were, into a little Head, ending, for the moſt part, in an Horn, opening lengthwiſe; and, for the moſt part, full of roundiſh or oval Seeds.

The *Species* are;

1. HELLEBORUS *niger fœtidus. C. B. P.* Stinking Black Hellebore, Bears-foot, or Setterwort.

2. HELLEBORUS *niger hortenſis, flore viridi. C. B. P.* Green-flowered Black Hellebore, or Bears-foot.

3. HELLEBORUS *niger, flore albo, etiam interdum valde rubente. J. B.* True Black Hellebore, or *Chriſtmas* Roſe.

4. HELLEBORUS *niger trifoliatus. Hort. Farn.* Trifoliated Black Hellebore.

5. HELLEBORUS *niger, flore roſeo, minor Belgicus. H. R. Blæſ.* Small *Belgic* Black Hellebore.

6. HELLEBORUS *niger hortenſis alter. C. B. P.* The other Garden Black Hellebore.

7. HELLEBORUS *niger, amplioribus foliis. Tourn.* Black Hellebore, with larger Leaves.

8. HRLLEBORUS *niger autumnalis, flore maximo. H. R. Par.* Autumnal Black Hellebore, with a very large Flower.

9. HELLEBORUS *niger, ſanguineo folio. Bocc. Muſ.* Black Hellebore, with a bloody Leaf.

10. HELLEBORUS *niger Orientalis, ampliſſimo folio, caule prœalto, flore purpuraſcente. Tourn. Cor.* Eaſtern Black Hellebore, with a very large Leaf, a tall Stalk, and a purpliſh Flower.

11. HELLEBORUS *foliis angulatis multifidis, flore globoſo. Lin. Hort. Cliff.* Globe Ranunculus, or Lockergowlans.

12. HELLEBORUS *flore folio inſidente. Lin. Hort. Cliff.* The Winter Aconite.

The firſt, ſecond, and eleventh Sorts grow wild in ſeveral Parts of *England*, eſpecially in the Northern Counties: the firſt and ſecond are Natives of Woods, and ſhady Places; but the eleventh Sort grows in very moiſt Meadows, and by the Sides of Brooks: this Sort I found in great Plenty near the Bridge at *Kirby-Lonſdale*, by the River-ſide.

All the other Sorts have been brought from other Countries; which thrive as well with us in the open Air, as thoſe that are Natives. The two firſt Sorts, being Wood-plants, thrive much better when planted in ſhady moiſt Places, than when they are planted in a warmer Situation, and too much expoſed to the Sun: and as they produce their Flowers in the Middle of Winter, when few other Plants appear, they deſerve a Place in ſmall Wilderneſs-quarters, Avenues, and ſhady Borders, where they will flouriſh exceedingly; and, if ſuffered to ſhed their Seeds, will ſoon furniſh a Garden with Plants enough: and this is the eaſieſt and beſt Method to propagate them.

The other Sorts are propagated either from Seeds, or by parting their Roots: the beſt Seaſon for this Work is in *October*, when you may divide the Roots into ſmall Heads, and plant them in a Situation where they may have the morning Sun only till Ten o'Clock; for if they are too much expoſed to the great Heats of the Sun, they will not thrive: theſe ſhould alſo have a moiſt light Soil; but the Ground ſhould not have Dung in it, which is very ſubject to rot the Roots of theſe Plants.

If you propagate them by Seeds, they ſhould be ſown ſoon after they are ripe, which is commonly in *May*, in a Border expoſed to the morning Sun, where the Plants will come up the following Spring, and ſhould be kept clear from Weeds; which, if ſuffered to grow, would ſoon deſtroy the young Plants: in this Border they ſhould remain until the *February* following; at which time they ſhould be tranſplanted into another Border, to the Diſtance of ſix Inches ſquare, obſerving to keep them conſtantly clear from Weeds; and in one Year after planting out they will flower, and may then be removed to the Places where they are to remain for good.

The third Sort is called the *Chriſtmas* Roſe, from its flowering at that Seaſon: the Flowers of this Sort are much larger than thoſe of any of the other Species: they are white on the Inſide, and of a greeniſh-white on the Outſide; and are produced ſingly on ſhort Footſtalks ariſing from the Root: but when the Roots are ſtrong, they produce a great Number of theſe Flowers; ſo that they make a fine Appearance; and this being at a Seaſon when there are few other Plants in Flower, it renders them the more valuable: if the Seaſon ſhould prove ſevere at the time they are in Flower, it will be proper to cover them, otherwiſe the Froſt will pinch the Flowers, and ſoon deſtroy their Beauty.

The ninth and tenth Sorts are ſomewhat tenderer than the others; ſo ſhould be planted in a warmer Situation; and if one or two Plants of each Sort are kept in Pots, and ſheltered under an Hot-bed-frame in Winter, it will be a good Method to preſerve the Species; becauſe in very hard Winters, thoſe which are planted in the full Ground may be deſtroyed.

The eleventh Sort muſt be planted in a very moiſt Soil, otherwiſe it will not thrive in Gardens; therefore may be placed in any wet Spot, where few other Things will grow; in which Situation theſe Plants will thrive exceedingly, and produce plenty of Flowers.

The twelfth Sort is well known in the Gardens under the Title of Winter Aconite, from its flowering ſoon after *Chriſtmas*: the Flowers are yellow, each ariſing with a ſhort Footſtalk from the Root, being ſurrounded by Leaves. This Sort propagates very faſt by its Root, and will thrive in any Soil or Situation.

There are great Doubts, whether any of theſe Species be the true Hellebore of the Antients; tho' Monſieur *Tournefort*, and ſome other Travellers, affirm that the third Species is it: but the *Germans* uſe the *Adonis hellebori radice, buphthalmi flore* for the Hellebore; and many other People believe it to be a Plant different from both theſe; but it is hoped, that we ſhall ſhortly know, who are in the right.

HELLEBORUS ALBUS. *Vide* Veratrum.

HELMET-FLOWER, or MONK's-HOOD. *Vide* Aconitum.

HEMEROCALLIS, The Lily-aſphodel, or Day-lily.

The *Characters* are;

The Flower has no Empalement, and conſiſts of one Leaf, which is cut into ſix Parts almoſt to the Bottom, having a ſhort Tube; but expands, and is reflexed at the Brim: in the Centre of the Flower is ſituated the Pointal, attended by ſix declining Stamina: *the Pointal afterward changes to an oval three-corner'd Fruit; having three Cells, which are full of roundiſh Seeds: to theſe Notes may be added, The Root being compoſed of ſeveral thick fleſhy Tubers, like the Aſphodel.*

This Genus of Plants was titled *Lilio-Aſphodelus* by Dr. *Tournefort*, from the Flower being ſhaped like the Lily, and the Root like that of the Aſphodel: but this, being a compound Name, is rejected by Dr. *Linnæus*, who has applied this of Hemerocallis to it, and has joined *Tournefort*'s Genus of Liliaſtrum to this; tho' the Flowers of that have ſix Leaves.

The *Species* are;

1. HEMEROCALLIS *radice tuberoſa, corollis monopetalis. Lin. Hort. Cliff.* The yellow Day-lily.

2. HEMEROCALLIS *radice tuberoſa, corollis monopetalis reflexis.* The ſcarlet Day-lily.

3. HEMEROCALLIS *radice tuberoſa, corollis hexapetalis. Lin. Hort. Cliff. St. Bruno*'s Lily, or great *Savoy* Spiderwort.

There are two Varieties of the firſt Sort, one with a large, and the other with a ſmaller Flower; as there are alſo of the ſecond and third Sorts: but theſe are not diſtinct Species; ſo I ſhall not enumerate them here. Dr. *Linnæus* has ſuppoſed the two firſt Sorts to be one Species; and that they differ only in the Size and Colour of their Flowers; but, from thirty Years Obſervation, I could not find, that they, by any Culture, nor from Seeds, would vary from their original Species: the Roots of the firſt Sort do not multiply near ſo faſt as thoſe of the ſecond; the Flowers are much ſmaller, and have a very agreeable Scent, ſomewhat like the Flowers of the Tuberoſe; for which it is eſteemed by many Perſons; and from thence ſome have given it the Name of yellow Tuberoſe: as this Sort doth not grow ſo tall, nor ſpread by the Root ſo much, as the ſecond Sort, ſo it may be admitted to have a Place in the Flower-garden, where it will thrive in almoſt any Soil or Situation; therefore this may be planted in ſuch Places, where few better Plants will grow.

It is chiefly propagated by parting the Root: the beſt time for doing of this is in *October*, when the Leaves are decayed: this ſhould not be done oftener than every other Year; becauſe when they are too often removed, or the Roots parted too ſmall, they will not produce many Flowers; nor will the Flowers be near ſo large.

The ſecond Sort multiplies ſo faſt, as to ſpread over the Beds where they are planted very ſoon; therefore is ſeldom allowed to have a Place in good Gardens; but in large Wilderneſs-quarters, and other ſhady Places, they may be planted to hide the Ground; for this will grow well under Trees; and in ſuch Places this Plant will add to the Variety.

The Flowers of both theſe Sorts are of very ſhort Duration: they open early in the Morning, and by Noon they begin to decay; and before the Evening they are quite withered, and do not open again; from whence they had the Name of Day-lily: if the Flowers of the ſecond Sort are handled, there will be a fine Copper-colour come off, which will colour the Hands and Face: and ſome unlucky People adviſe Perſons, who are ignorant of this, to ſmell to the Flower; in the doing of which, their whole Face will be dyed of a Copper-colour.

The *Savoy* Spiderwort, or, as the *French* call it, St. *Bruno*'s Lily, is a Plant of humbler Growth than either of the former: this Sort flowers earlier in the Year: the Leaves of this Sort are ſomewhat like thoſe of the Spiderwort; and pretty firm, and grow upright: the Flower-ſtalks grow about a Foot high, and have ſeveral white Flowers at the Top, ſhaped like thoſe of the Lily, which hang on one Side, and have an agreeable Scent: theſe are but of ſhort Duration, ſeldom continuing in Beauty above two or three Days; but when the Plants are ſtrong, they will produce eight or ten Flowers upon each Stalk; ſo they make a good Appearance while they laſt.

This Sort is uſually propagated by parting the Roots: Autumn is the beſt Seaſon for doing this Work, as it alſo is for tranſplanting of the Roots; for when they are removed in the Spring, they ſeldom flower the ſame Year; or, if they do, it is but weakly: theſe Plants ſhould not be tranſplanted oftener than every third Year, when the Roots may be parted to make an Increaſe of the Plants; but they ſhould not be divided too ſmall; for if they are, it will be two Years before they flower: this Sort delights in a light loamy Soil, and in an open Expoſure; ſo muſt not be planted under the Drip of Trees; but if they are planted to an Eaſt Aſpect, where they may be protected from the Sun in the Heat of the Day, they will continue in Beauty longer than when they are more expoſed.

HEMIONITIS, Moonfern.

This is a Plant which is ſeldom propagated in Gardens; therefore I ſhall not trouble the Reader with any Account of it more than this; that whoever hath a mind to cultivate it, may ſee full Directions for that Purpoſe under the Article *Lingua Cervina*, to which this Plant is nearly allied, and delights in the ſame Situation and Culture.

HEPATICA, Noble Liverwort.

The *Characters* are;

The Root is fibroſe and perennial: the Leaf conſiſts of three Lobes growing on a Pedicle, which ariſes from the Root: the Pedicle of the Flower is naked and ſingle, ariſing from the Root: the Cup of the Flower is, for the moſt part, compoſed of one Leaf, which is ſometimes cut into three or four deep Diviſions: the Flower conſiſts of many Leaves, which expand in form of a Roſe: the Fruit is globular, conſiſting of one ſingle Cell, which is curvated, as in the Leſſer Celandine.

The *Species* are;

1. HEPATICA *trifolia, cæruleo flore. Cluſ.* The ſingle blue Hepatica, or Noble Liverwort.

2. HEPATICA *trifolia, flore cæruleo pleno. Cluſ.* The double blue Hepatica, or Noble Liverwort.

3. HEPATICA *trifolia, flore albo ſimplici. Boerh. Ind.* The ſingle white Hepatica, or Noble Liverwort.

4. HEPATICA *trifolia, rubro flore. Cluſ.* Single red Hepatica, or Noble Liverwort.

5. HEPATICA *trifolia, flore rubro pleno. Boerh. Ind.* Double-red, or peach-colour'd Hepatica.

Theſe Plants are ſome of the greateſt Beauties of the Spring: their Flowers are produced in *February* and *March* in great Plenty, before the green Leaves appear, and make a very beautiful Figure in the Borders of the Pleaſure-garden; eſpecially

cially the double Sorts, which commonly continue a Fortnight longer in Flower than the ſingle Kinds, and the Flowers are much fairer. I have ſeen the double white Kind often mentioned in Books, but could never ſee it growing; tho' I don't know but ſuch a Flower might be obtained from Seeds of the ſingle white, or blue Kinds. I have ſometimes known the double blue Sort produce ſome Flowers in Autumn which were inclining to White; and thereby ſome People have been deceived, who have procured the Roots at that Seaſon, and planted them in their Gardens; but the Spring following their Flowers were blue, as before: and this is a common thing when the Autumn is ſo mild as to cauſe them to flower. But whether the double white Sort, mentioned in the Books, was only this accidental Alteration in the Colour of the Flower, I can't ſay; tho' it ſeems very probable it was, ſince I never could hear of any Perſon who ever ſaw the double white Sort flower in the Spring.

The ſingle Sorts produce Seeds every Year, whereby they are eaſily propagated; and alſo new Flowers may be that way obtained. The beſt Seaſon for ſowing of the Seeds is in the Beginning of *Auguſt*, either in Pots or Boxes of light Earth, which ſhould be placed ſo as to have only the morning Sun, until *October*, when they ſhould be removed into the full Sun, to remain during the Winter-ſeaſon: but in *March*, when the young Plants will begin to appear, they muſt be removed again to a ſhady Situation, and in dry Weather ſhould be frequently watered; and about the Beginning of *Auguſt* they will be fit to be tranſplanted: at which time you ſhould prepare a Border, facing the Eaſt, of good freſh loamy Earth, into which you ſhould remove the Plants, placing them at about ſix Inches Diſtance each Way, cloſing the Earth pretty faſt to their Roots, to prevent the Worms from drawing them out of the Ground, which they are very apt to do at that Seaſon; and in the Spring following they will begin to ſhew their Flowers: but it will be three Years before they flower ſtrong, and till then you cannot judge of their Goodneſs; when, if you find any double Flowers, or any of a different Colour from the common Sorts, they ſhould be taken up, and tranſplanted into the Borders of the Flower-garden, where they ſhould continue at leaſt two Years before they are taken up, or parted; for it is remarkable in this Plant, that where they are often removed and parted, they are very ſubject to die; whereas, when they are permitted to remain undiſturbed for many Years, they will thrive exceedingly, and become very large Roots.

The double Flowers, which never produce Seeds, are propagated by parting their Roots, which ſhould be done in *March*, at the time when they are in Flower: but you ſhould be careful not to ſeparate them into very ſmall Heads; nor ſhould they be parted oftener than every third or fourth Year, if you intend to have them thrive, for the Reaſon before given. They delight in a ſtrong loamy Soil, and in an Eaſtern Poſition, where they may have only the morning Sun; tho' they will grow in almoſt any Aſpect, if they are planted in ſtrong moiſt Ground, and are never injured by Cold.

HEPATORIUM. *Vide* Eupatorium.

HEPTAPHYLLUM. *Vide* Pentaphyllum.

HERACLEUM. *Vide* Spondylium, *and* Panax.

HERBA GERARDI. *Vide* Angelica ſylveſtris minor.

HERBA PARIS. *Vide* Paris.

HERMANNIA.

The *Characters* are;

The Cup of the Flower conſiſts of one Leaf, which reſembles a Bladder, and is cut into five Segments: the Flower conſiſts of five Leaves, the lowermoſt of which are narrow, but the upper ones are broad, and twiſted, having a pentangular Ovary in the Centre, which is ſurrounded by five Stamina, *and is afterward turn'd to a five-corner'd long Tube.*

The *Species* are;

1. HERMANNIA *fruteſcens, folio oblongo ſerrato latiori. Boerh. Ind.* Shrubby Hermannia, with a broader oblong ſerrated Leaf.

2. HERMANNIA *fruteſcens, folio groſſulariæ parvo hirſuto. Boerh. Ind.* Shrubby Hermannia, with a ſmall hairy Gooſberry-leaf.

3. HERMANNIA *fruteſcens, folio ibiſci hirſuto molli, caule piloſo. Boerh. Ind.* Shrubby Hermannia, with a ſoft hairy Marſhmallow-leaf, and a woolly Stalk.

4. HERMANNIA *fruteſcens, folio oblongo ſerrato. Tourn.* Shrubby Hermannia, with an oblong ſerrated Leaf.

5. HERMANNIA *fruteſcens, folio oblongo molli cordato hirſuto. Boerh. Ind.* Shrubby Hermannia, with a ſoft oblong hairy heart-ſhaped Leaf.

6. HERMANNIA *fruteſcens, folio multifido tenui. caule rubro. Boerh. Ind. alt.* Shrubby Hermannia, with a narrow multifid Leaf, and a red Stalk.

7. HERMANNIA *fruteſcens, folio lavendulæ latiori & obtuſo, flore parvo aureo. Boerh. Ind. alt.* Shrubby Hermannia, with a broad blunt Lavender-leaf, and a ſmall golden Flower.

All theſe Sorts of Hermannia are Natives of the *Cape of Good Hope*, from whence they have been brought into the *European* Gardens.

The fourth Sort is the moſt common in *Europe*, and was the firſt known in the Gardens: this will grow to the Height of eight or ten Feet: the Branches generally grow erect, and the Stem becomes woody: but the Flowers of this Sort, being of a whitiſh-green Colour, make but little Appearance.

The firſt and ſecond Sorts do not grow ſo high as the other, and ſhoot their Branches more horizontally. Theſe produce their Flowers in ſmall Spikes, from the End of their Branches, which are of a yellow Colour; and in the Month of *April*, when they flower, make a fine Appearance in the Green-houſe.

The third, fifth, ſixth, and ſeventh Sorts are yet of humbler Growth than either of the other. Theſe ſeldom grow above three Feet high, and put out many Branches on every Side, ſo as to form buſhy Heads. The Flowers of theſe Sorts are produced in very ſmall Cluſters, ſeldom more than three growing together; but theſe continue much longer in Flower than any of the other Sorts; ſo make an agreeable Variety among other hardy Green-houſe Plants.

Theſe Plants are all propagated by planting Cuttings of them during any of the Summer-months, in a Bed of freſh light Earth, obſerving to water and ſhade them until they are well rooted, which will be in about ſix Weeks after planting; then you ſhould take them up, preſerving a Ball of Earth to their Roots, and plant them into Pots filled with freſh light Earth, placing them in a ſhady

Situation until they have taken freſh Root; after which they may be expoſed to the open Air, with Myrtles, Geraniums, *&c.* until the Middle or Latter-end of *October*, when they muſt be removed into the Green-houſe; obſerving to place them in the cooleſt Part of the Houſe, and where they may have as much free Air as poſſible; for if they are too much drawn in the Houſe, they will appear very faint and ſickly, and ſeldom produce many Flowers; whereas, when they are only preſerved from the Froſt, and have a great Share of free Air, they will appear ſtrong and healthy, and produce large Quantities of Flowers in *April* and *May*; during which Seaſon they make a very handſome Shew in the Green-houſe: they muſt alſo be frequently watered, and will require to be new potted at leaſt twice every Year, *i. e.* in *May* and *September*; otherwiſe their Roots will be ſo matted, as to prevent their Growth.

Theſe Plants rarely produce good Seeds with us, except the fourth Sort, which ripens its Seeds every Year in *England:* but when they are obtained from abroad, they muſt be ſown upon a moderate Hot-bed; and when the Plants come up, they muſt be tranſplanted into ſmall Pots, and plunged into another very moderate Hot-bed, in order to promote their Rooting; after which they muſt be harden'd by degrees, to endure the open Air in Summer, and may then be treated as the old Plants.

HERMODACTYLUS, The Hermodactyl, commonly called Snakes-head Iris.

The *Characters* are;

It hath a lily-ſhaped Flower, conſiſting of one Leaf, and ſhaped exactly like an Iris; but has a tuberoſe Root, divided into two or three Dugs, like oblong Bulbs.

We have but one *Species* of this Plant; *viz.*

HERMODACTYLUS *folio quadrangulo. C. B. P.* Snakes-head Iris, *vulgo.* This is alſo called *Iris tuberoſa Belgarum*; *i. e.* The tuberoſe Iris of the *Dutch*.

This Plant is eaſily propagated by its Tubers, which ſhould be taken off ſoon after the green Leaves decay, which is the proper Seaſon for tranſplanting the Roots; but they ſhould not be kept long out of the Ground, leſt they ſhrink; which will cauſe them to rot when they are planted. They ſhould have a loamy Soil, not too ſtrong; and muſt be planted to an Eaſt Aſpect, where they will flower very well. Theſe Roots ſhould not be removed oftener than once in three Years, if you deſign to increaſe them; but then they ſhould be planted at a farther Diſtance from each other, than if they were to remain but one Year; and the Beds ſhould be kept clear from Weeds, and at *Michaelmas* there ſhould be ſome fine Earth laid over the Beds, which will greatly ſtrengthen their Roots. The Diſtance which theſe Plants ſhould be allowed is ſix Inches ſquare; and they ſhould be placed four Inches deep in the Ground. Theſe produce their Flowers in *May*, and their Seeds are ripe in *Auguſt*; but as they multiply pretty faſt by their Roots, few People are at the Trouble of raiſing them from Seeds; but thoſe who have an Inclination ſo to do, muſt treat them in the manner directed for the bulbous Iris's.

The Roots of this Plant are very apt to run deep into the Ground, and then they ſeldom produce Flowers; and many times they ſhoot ſo deep as to be loſt, eſpecially where the Soil is very light: therefore, to prevent this, it will be proper to lay a Thickneſs of Rubbiſh under the Border, where theſe are planted, to hinder them from getting down. This ſhould always be practiſed in light Ground; but in ſtrong Land there will be no Occaſion to make uſe of this Precaution; becauſe they do not ſhoot downward ſo freely in that.

This Plant has by ſome Botanic Writers been ſuppos'd the true Hermodactyl; but what has been long uſed in *Europe* for that is the Root of a Colchicum.

HERNANDIA, Jack-in-a-Box, *vulgo*.

The *Characters* are;

It hath a ſhort multifid ſpreading bell-ſhaped Flower, or a roſaceous Flower, conſiſting of ſeveral Petals, which are placed in a circular Order; theſe are ſome of them barren, and others are fertile: the Cup of the Flower afterward becomes an almoſt ſpherical Fruit, which is ſwelled and perforated, containing a ſtriated roundiſh Nut.

We have but one *Species* of this Plant; which is,

HERNANDIA *amplo hederæ folio umbilicato. Plum.* Hernandia with a large umbilicated Ivy-leaf, commonly call'd in the *Weſt-Indies*, Jack-in-a-Box.

This Plant is very common in *Jamaica, Barbados, St. Chriſtophers*, and many other Places in the *Weſt-Indies*; where it is known by the Name of Jack-in-a-Box. The Fruit of this Plant, when ripe, is perforated; and the Nut in the Inſide becomes hard: ſo that when the Wind blows through the Fruit, it makes a whiſtling Noiſe, which may be heard at a Diſtance; from whence, I ſuppoſe, the Inhabitants gave this Name to the Plant. It grows in the Gullies, where there are Rills of Water.

In *Europe* this Plant is preſerved in curious Gardens, with other tender Exotic Plants. It is propagated by ſowing the Seeds on an Hot-bed in the Spring; and when the Plants come up, they muſt be planted into ſeparate Pots, and plunged into the Hot-bed again; and afterward muſt be treated in the ſame manner as other tender Exotic Plants, always keeping them in the Bark-ſtove.

The beſt time to ſhift theſe Plants is in *July*, that they may be well rooted before the Cold approaches; in the Winter-ſeaſon they ſhould have a moderate Share of Heat, and in the Summer they muſt have plenty of Air in hot Weather. With this Management the Plants will grow to the Height of ſixteen Feet, or more; and the Leaves, being very large, will make a beautiful Appearance in the Stove.

This Plant hath not as yet flowered in *England*, though we may expect ſome of the large Plants to flower in a ſhort time.

HERNIARIA, Rupturewort.

The *Characters* are;

The Calyx *is quadrifid, or, for the moſt part, quinquefid, and expanded in form of a Star, having five* Stamina *in the Centre: the Fruit (which grows on the Bottom of the Flower) becomes a membranaceous furrow'd round Capſule, which is divided into eight Cells, each of which contains one ſmall pointed Seed.*

The *Species* are;

1 HERNIARIA *glabra. J. B.* Smooth Rupturewort.

2. HERNIARIA *hirſuta. J. B.* Rough or hairy Rupturewort.

3 HERNIARIA *alſines folio. Tourn.* Rupturewort with a Chickweed-leaf.

4. HERNIARIA *fruticoſa, viticulis lignoſis.*

lignoſis. C. B. Shrubby Rupturewort, with woody Branches.

Theſe Plants are ſeldom cultivated but in Botanic Gardens, for the ſake of Variety: the three firſt are, for the moſt part, annual Plants, ſeldom continuing longer than one Year; and muſt be permitted to ſhed their Seeds, whereby they are better preſerv'd than if ſown with Art. The fourth Sort is an abiding Plant, which may be propagated by Cuttings: but as they are Plants of no Beauty, they are not worth cultivateing.

The firſt Sort is what ſhould be uſed in the Shops, but is rarely ſeen in *London*; the Herb-women commonly bringing the Parſley Breakſtone to the Markets, which is ſold inſtead of this Plant.

HESPERIS, Dame's-violet, Rocket, or Queen's Gilliflower.

The *Characters* are;

The Flower conſiſts, for the moſt part, of four Leaves, which expand in form of a Croſs: out of the Flower-cup ariſes the Pointal, which becomes a long taper cylindrical Pod, which is divided into two Cells by an intermediate Partition, to which the imbricated Valves adhere on both Sides, and are furniſhed with oblong, cylindrical, or globular Seeds.

The *Species* are;

1. HESPERIS *hortenſis, flore purpureo. C. B. P.* Garden Dame's-violet, with a purple Flower, or ſingle purple Rocket.

2. HESPERIS *hortenſis, flore candido. C. B. P.* Garden Dame's-violet, with a white Flower, or ſingle white Rocket.

3. HESPERIS *ſylveſtris inodora. C. B. P.* Unſavoury wild Dame's-violet.

4 HESPERIS *hortenſis, flore variegato. Jeſſieu.* Garden Dame's-violet, with a variegated Flower.

5. HESPERIS *hortenſis, flore purpureo pleno. H. R. Par.* Garden Dame's-violet, with a double purple Flower, commonly call'd Double purple Rocket.

6. HESPERIS *hortenſis, flore albo pleno. H. R. P.* Garden Dame's-violet, with a double white Flower, or double white Rocket.

7. HESPERIS *hortenſis, flore vario pleno. H. R. Par.* Garden Dame's-violet, with a variable Flower.

8. HESPERIS *maritima ſupina exigua. Tourn.* Low maritime Dame's-violet.

9. HESPERIS *montana pallida odoratiſſima. C. B. P.* Pale mountain Dame's-violet, with a very ſweet Smell.

10. HESPERIS *maritima anguſtifolia incana. Inſt. R. H.* Dwarf annual Stock, ſometimes call'd *Virginia* Stock.

11. HESPERIS *foliis multifidis. Flor. Leyd.* Annual Dame's-violet, with ſmall white Flowers, and Leaves finely cut.

12. HESPERIS *lutea, ſiliquis ſtrictiſſimis. Inſt. R. H.* Yellow Dame's-violet, with very narrow Pods.

13. HESPERIS *allium redolens. Mor. Hiſt.* Dame's-violet ſmelling like Garlick, commonly call'd Sawce alone, or Jack-by-the-Hedge.

14. HESPERIS *leucoii folio ſerrato, ſiliqua quadrangula. Inſt. R. H.* Dame's-violet with a Wallflower-leaf; and a ſquare Pod.

15. HESPERIS *maritima latifolia, ſiliqua tricuſpidi. Inſt. R. H.* Broad-leav'd maritime Dame's-violet, with a three-pointed Pod.

The ſeven firſt-mention'd Sorts are abiding Plants, and may be propagated by parting their Roots in *Auguſt*, eſpecially thoſe with double Flowers, which never produce Seeds; but the ſingle Kinds are better propagated by ſowing their Seeds in

March, which will produce ſtronger Plants than thoſe obtained from Offſets. The Heads, which are divided, ſhould be well furniſhed with Roots, otherwiſe they are very ſubject to miſcary: nor ſhould the old Roots be ſeparated into very ſmall Heads, which would occaſion their flowering weak the ſucceeding Seaſon. The Soil in which theſe Plants ſhould be planted, ought to be freſh, and inclining to a ſandy Loam; but ſhould not be mixed with Dung, which often cauſes the Roots to rot: but if you bury ſome rotten Woodpile Earth, or very rotten Tanners Bark, juſt deep enough for their Fibres to reach it, the Plants will thrive exceedingly, and produce great Quantities of very large fair Flowers, as I have ſeveral times experienc'd: but if this ſhould be ſo ſhallow as to touch the main Roots, 'tis ten to one if they don't rot away; which is very often the Caſe with theſe Flowers, when they are planted in a rich dung'd Soil. The double white Rocket is by far the moſt beautiful Plant of all the Kinds, the Flowers of which are as large and double as the faireſt double Stock-gilliflower: it was formerly planted in great Plenty in the Gardens near *London*, to ſupply the Markets with Flowers for Baſons; for which Purpoſe there is not any Plant better adapted, and will continue in Beauty for a long time: but of late Years theſe Plants have not ſucceeded ſo well as formerly, which may be owing to the dunging of the Soil; for it is obſervable, that in freſh Ground, which has not been till'd, theſe Plants ſucceed beſt. The ſingle Kinds have very little Beauty in them, when compar'd with the double, and are therefore ſeldom cultivated in Gardens: but as they are much hardier than the double, and will thrive in a ſhady Border, they may be admitted for Variety. Theſe all produce their Flowers in *May*, and the ſingle Kinds will perfect their Seeds in *Auguſt*; which, if ſuffer'd to ſhed upon the Ground, will come up very well, and ſave the Trouble of ſowing them.

The eighth, eleventh, fourteenth, and fifteenth Sorts are low annual Plants of little Beauty; ſo are ſeldom preſerved but in Botanic Gardens. Theſe may be ſown either in the Spring or Autumn, upon a Border of light Earth, where they are to remain; for they do not bear tranſplanting well. The autumnal Plants will grow much ſtronger than thoſe which are ſown in the Spring; and if the Seeds of theſe are ſuffered to ſcatter when they are ripe, the Plants will come up, and require no other Culture, but to keep them clear from Weeds.

The twelfth Sort is an abiding Plant; but, having no Beauty, is ſeldom allowed a Place in Gardens.

The thirteenth Sort grows wild by the Sides of Ditches, and in ſhady Woods, in moſt Parts of *England*; and being of late much uſed in Medicine, I have inſerted it here. It is a biennial Plant, which periſhes ſoon after the Seeds are ripe.

The eleventh Sort is a very low Plant, which may be ſown for Edgings, or in Patches on the Borders of the Pleaſure-garden, as the Dwarf Lychnis, Venus-looking-glaſs, and other low annual Plants, are uſually cultivated to embelliſh the Borders in Autumn, after moſt other Flowers are paſt: for which Purpoſe this Sort is juſtly eſteemed. The Seed may be ſown in *April* or *May*, to flower late. But the Method to have this Plant in the greateſt Perfection is, to ſow the Seeds in ſmall Patches in the Borders under warm Walls in *Auguſt*, which will come up ſoon after, and the Plants will get Strength enough to endure the Cold; and in the Spring following theſe will produce much larger Flowers than thoſe which come up in the Spring.

The ninth Sort is a biennial Plant, ſeldom continuing longer than two Years: this muſt be propagated by ſowing the Seeds in the manner directed for the firſt Sorts, and the ſecond Year the Plants will flower; which if you intend to preſerve, you muſt cut off moſt of the Flower-ſtems, before the Flowers decay; which will occaſion the Roots to put out new Heads, if they are ſound, whereby they may be often continued two or three Years.

The Flowers of this Sort are very ſmall, and of a white Colour; ſo make no great Appearance; but they have a very agreeable Scent in the Night, ſo that many Perſons cultivate it in their Gardens; and ſome plant them in Pots, to place in their Rooms in the Evening, for the ſake of its Fragrancy.

HIBISCUS, Viſcous-ſeeded Mallow.

This Title was formerly applied to the Marſh-mallow; but the Title of *Althæa* having been more generally applied to that Genus, by the modern Botaniſts, this of *Hibiſcus* has been diſuſed, till Dr. *Linnæus* applied it to this Genus: but to this he has added *Tournefort*'s Genus of *Ketmia*; which, if the Fructification be admitted as a Character, will by no means agree with this.

The *Characters* are;

The Flower is of the malvaceous Kind: the Petals are twiſted at the Bottom, and cloſely embrace the Column, which is in the Centre: there is a double Empalement to the Flower, the outer being compos'd of ſeveral narrow Leaves; but the inner is of one Leaf, cut at the upper Part into five Segments: the Pointal afterward changes to a roundiſh Fruit, having five Cells, each containing a ſingle Seed, and the whole Fruit incloſed with a ſoft pulpy Fleſh like a Berry.

We know but one *Species* of this Genus; *viz.*

Hibiscus *foliis cordatis crenatis, angulis lateralibus ſolitariis parvis. Lin. Hort. Cliff.* Malvariſcus, or viſcous-ſeeded Mallow.

This grows to the Height of twelve or fourteen Feet in *England*; but in *Jamaica*, and other Parts of the *Weſt-Indies* where it is a Native, it grows to be a large Shrub upward of twenty Feet high.

Toward the Extremity of the Branches, the Flowers come out ſingly, from the Footſtalk of the Leaves: theſe are of a fine ſcarlet Colour; but the Petals of the Flowers being twiſted, they never expand, but are ſhut up, and cloſely embrace the Column of *Stamina*, which is ſtretched out beyond the Petal of the Flower: after the Flower is paſt, the Pointal changes to a roundiſh pulpy Berry of a red Colour, incloſing the Seed-veſſel.

This Plant may be eaſily propagated by planting Cuttings, during any of Summer-months, in Pots filled with light rich Earth, and plunged into a moderate Hot-bed, where they muſt be ſhaded from the Sun in the Heat of the Day, until they have taken Root; which, if they are duly watered, will be in ſix Weeks after planting; and in about a Month after, the Cuttings will have made ſufficient Root to be tranſplanted; when they ſhould be each planted into a ſeparate Pot fill'd with light Earth, and placed in the Shade until they have taken freſh Root.

The Plants of this Sort muſt be placed in a Stove in the Winter, where they may enjoy a temperate Warmth, in which they will thrive, and produce Flowers, moſt Part of the Winter, and the Spring; and ſometimes the Fruit will ripen well in *England:* in the Summer theſe ſhould be placed abroad in a warm Situation; and although they will not grow much while they are abroad, yet they will be in better Condition for flowering in the Winter, than when they remain in the Stove all the Summer; becauſe they are apt to draw, and produce weak Shoots; and the Leaves are ſubject to exude a ſweet clammy Dew, which their whole Surfaces are covered with; and this draws Numbers of Inſects, which infeſt both Leaves and Shoots, and thereby ſtints the Growth of the Plants, and renders them unſightly: but this rarely happens to thoſe Plants which are placed in the open Air.

If this Plant is propagated by Seeds, they ſhould be ſown upon a good Hot-bed in the Spring; and when the Plants are ſtrong enough to remove, they ſhould be each planted into a ſeparate Pot, and plunged again into the Hot-bed, to facilitate their taking freſh Root; and then they muſt be treated in the ſame manner, as thoſe which are raiſed from the Cuttings. As this Plant flowers in the Winter and Spring, ſo at thoſe Seaſons it makes a good Appearance in the Stove among other tender Plants.

HIERACIUM, Hawkweed.

The *Characters* are;

The Stalks are branched and ſlender: the Leaves are produced alternately: the Cup of the Flower is ſhort, firm, and expanded: the Flower conſiſts of many Leaves, which are placed in an orbicular Order, and open in form of a Marigold: the Seeds are ſlender and angular, or furrowed: to which may be added, The whole Plant hath a milky Juice.

The *Species* are;

1. HIERACIUM *murorum, folio piloſiſſimo. C. B. P.* Golden Hawkweed, with hairy Leaves.

2. HIERACIUM *Pyrenaicum, folio cerinthes, latifolium. Schol. Bot. Pyrenean* Hawkweed, with a broad Honeywort-leaf.

3. HIERACIUM *folio dentis leonis, flore ſuave-rubente. C. B. P.* Red-flowered Hawkweed, with Dandelion-leaves.

4. HIERACIUM *lanatum, ſonchi vel erigerontis facie. H. L.* Downy Hawkweed, with the Face of Sow-thiſtle or Groundſel.

5. HIERACIUM *medio-nigrum Bæticum majus. Par. Bat.* Greater *Spaniſh* Hawkweed, with yellow Flowers, having black Bottoms.

6. HIERACIUM *medio-nigrum Bæticum majus, flore ſulphureo.* Greater *Spaniſh* Hawkweed, with brimſtone-colour'd Flowers, having black Bottoms.

7. HIERACIUM *barbatum medio-nigrum minus. H. L.* Leſſer Hawkweed, with yellow Flowers, having black Bottoms.

8. HIERACIUM *latifolium piloſum coccineum umbellatum Indicum. H. L.* Broad-leav'd *Indian* Hawkweed, with ſcarlet Flowers growing in an Umbel.

9 HIERACIUM *longius radicatum. Ger. Emac.* Long-rooted Hawkweed.

10. HIERACIUM *minus, præmorſa radice. Park.* Hawkweed with bitten Roots, or yellow Devil's-bit.

11. HIERACIUM *primum latifolium. Cluſ.* Broad-leav'd *Hungarian* Hawkweed.

12. Hieracium *fruticoſum latifolium hirſutum. C. B.* Buſhy Hawkweed, with broad rough Leaves.

13. Hieracium *fruticoſum latifolium glabrum. Park. Theat.* Smoother broad-leav'd buſhy Hawkweed.

14. Hieracium *fruticoſum anguſtifolium majus. C. B.* Narrow-leav'd buſhy Hawkweed.

15. Hieracium *pulmonaria dictum, anguſtifolium. Raii Syn.* Narrow-leav'd Hawkweed, commonly called Golden Lungwort.

16. Hieracium *macrocaulon hirſutum, folio rotundiore. D. Lawſon.* Round-leav'd rough Hawkweed, with a tall Stalk.

17. Hieracium *hirſutum, folio longiore. D. Lawſon.* Slender-ſtalk'd rough Hawkweed, with a longer Leaf.

18. Hieracium *murorum laciniatum minus piloſum. C. B.* Golden Lungwort, with more jagged Leaves.

19. Hieracium *murorum, folio longiore diſſecto, maculis lividis aſperſo. Vaill. Mem. Acad. Scien.* Long cut-leav'd Golden Lung-wort, with ſpotted Leaves.

20. Hieracium *caſtorei odore, Monſpelienſium. Raii Syn.* Hawkweed of *Montpelier*, ſmelling like Caſtor.

21. Hieracium *luteum glabrum, ſive minus hirſutum. J. B.* Smoother yellow Hawkweed.

22. Hieracium *montanum, cichorei folio, noſtras. Raii Syn.* Succory-leav'd mountain Hawkweed.

23. Hieracium *maximum, chondrillæ folio, aſperum. C. B* The greateſt rough ſuccory-leav'd Hawkweed.

24. Hieracium *echioides, capitulis cardui benedicti. C. B.* Hawkweed like Vipers Bugloſs, with Heads like the Bleſſed Thiſtle, commonly called Ox-tongue.

25. Hieracium *pulmonaria dictum latifolium humilius, ramulis expanſis. Act. Phil. N.* 417. Dwarf branching Hawkweed, with broad Leaves.

26. Hieracium *Sabaudum altiſſimum, foliis latis brevibus crebrius naſcentibus. Mor. Hiſt.* Talleſt *Savoy* Hawkweed, with ſhort broad Leaves.

27. Hieracium *fruticoſum, anguſtiſſimo incano folio. H. L.* Buſhy Hawkweed, with very narrow hoary Leaves.

28. Hieracium *Pyrenaicum rotundifolium amplexicaule. Inſt. R. H.* Round-leav'd *Pyrenean* Hawkweed, whoſe Leaves embrace the Stalks.

23. Hieracium *murorum, foliis maculis & lituris atro-rubentibus, pulchre variegatis. Vaill. Mem. Acad. Scien.* Hawkweed whoſe Leaves are beautifully marked with dark-red Spots.

30. Hieracium *fruticoſum latifolium, foliis dentatis, glabrum. C. B.* Broad leav'd buſhy Hawkweed, with ſmooth indented Leaves.

31. Hieracium *magnum Dalechampii, folio minus laciniato.* Greater Hawkweed of *Dalechamp*, with leſs cut Leaves.

32. Hieracium *magnum Dalechampii, folio majus laciniato.* Greater Hawkweed of *Dalechamp*, with more cut Leaves.

The firſt, ninth, tenth, eleventh, twelfth, thirteenth, fourteenth, fifteenth, ſixteenth, ſeventeenth, eighteenth, nineteenth, twentieth, twenty-firſt, twenty-ſecond, twenty-third, twenty-fourth, and twenty-fifth Sorts grow wild in *England*, but particularly in the Northern Counties; ſo are rarely introduced into Gardens: but whoever hath a mind to cultivate them, need only to ſow their Seeds, or tranſplant their Roots into the Garden, where they will thrive faſt enough, in any Soil or Situation: they are moſt of them abiding Plants.

The ſecond, twenty-ſixth, twenty-ſeventh, twenty-eighth, twenty-ninth and thirtieth Sorts are alſo abiding Plants, which grow upon the *Alps* and *Apennines*; and are preſerved in the Gardens of ſuch Perſons as are curious in having a Variety of Plants; but as there is little Beauty in their Flowers, they are not much cultivated in *England*.

The eighth Sort is an abiding Plant, which produces Tufts of ſcarlet Flowers, which continue a long time in Beauty; and being a very hardy Plant, is frequently admitted into Gardens: this is ſome times called Grim the Collier, and Golden Mouſe-ear.

The thirty-firſt and thirty-ſecond Sorts grow wild in the South of *France*, and in *Italy*; yet are hardy enough to endure the Cold of our ordinary Winters very well in the open Air. The Seeds of theſe Plants ſhould be ſown in the Spring, on a Bed of freſh undung'd Earth, where they are deſigned to remain, becauſe they ſeldom ſucceed when they are tranſplanted. When the Plants are come up, they ſhould be cleared from Weeds; and where they are too cloſe, they ſhould be thinned, leaving them about eight or ten Inches aſunder. Some of theſe Plants will flower the firſt Year they are ſown; but theſe will not produce good Seeds; but thoſe which live over the Winter will flower early the following Summer; and, if the Seaſon proves favourable, will produce good Seeds in *Auguſt*. Theſe Plants ſeldom continue longer than two Years; ſo that Seeds ſhould be annually ſown, in order to preſerve their Kinds; for as they continue in Flower the greateſt Part of the Summer, they merit a Place in every good Garden.

The other Sorts here mentioned are annual Plants, which, for the Variety of their Flowers, deſerve a Place in a Garden; theſe Plants are much ſtronger, and produce a greater Quantity of Flowers, when they are raiſed in Autumn, than thoſe which are ſown in the Spring; and they are ſo hardy, as to endure the ſevereſt Cold of our Climate in the open Air, provided they are planted or ſown upon a dry Soil; for too much Wet is apt to rot them: the beſt Seaſon for ſowing the Seeds is in *Auguſt*; and toward the latter End of *September* the Plants will be ſtrong enough to tranſplant, which ſhould be into the Borders where they are to remain for Flowering; theſe will produce their Flowers in *May*, and their Seeds will be ripe in *July*; which, if ſuffered to ſhed upon the Ground, will grow, and ſave the Trouble of ſowing them.

HIPPOCASTANUM, Horſe-cheſtnut.

The *Characters* are;

It hath digitated or fingered Leaves: the Flowers, which conſiſt of five Leaves, are of an anomalous Figure, opening, as it were, with two Lips: there are Male, Female, and Hermaphrodite Flowers upon the ſame Spike, which, when fully blown, make a ſpecious Shew, being always produced at the Extremity of the Branches: the Hermaphrodite Flowers are ſucceeded by Nuts, which grow in green prickly Huſks.

The *Species* are;

1. HIPPOCASTANUM *vulgare. Tourn.* Common Horſe-cheſtnut.

2. HIPPOCASTANUM *vulgare, foliis ex luteo variegatis.* The yellow-blotch'd Horſe-cheſtnut.

3. HIPPOCASTANUM *vulgare, foliis ex albo variegatis.* The white-blotch'd Horſe cheſtnut.

I have here enumerated the two ſtriped-leav'd Kinds, which have been by Accident obtained; but theſe are only occaſioned by a Weakneſs in the Trees; for when either of theſe are budded or grafted upon Stocks of the plain-leav'd Kind, if they take kindly, and ſhoot freely, they will become plain: indeed, the Stripes in the Leaves of the Tree have more the Appearance of a Diſtemper, than in any other Sort of Tree; ſo it is not worthy of being propagated.

In the Horſe-cheſtnut there ſeem to be two or three Varieties differing in the Breadth of their Leaves, and the Colour of their Flowers, one of which hath its Flowers remarkably ſpotted with Red and Yellow, ſo as to be ſeen at a great Diſtance, and is ſomewhat later in flowering.

Theſe Trees were greatly in Faſhion ſome Years ago; when the Avenues to Houſes, and other ſhady Walks, were commonly planted with them: but there are few Sorts of Trees more unfit for this Purpoſe; becauſe their regular pyramidal Growth is obſtructed, when they ſtand near each other; ſo that the Branches will interfere on each ſide in the Lines; by which they will be prevented flowering: and as theſe Leaves begin to decay by the End of *July*, they make a very bad Appearance after that time; and by their Leaves falling, they occaſion a Litter for near three Months: upon theſe Accounts, this Tree has been leſs eſteemed of late Years.

But although it is not ſo proper for planting of Avenues, as many other Trees, yet it ſhould not be wholly excluded from Gardens; where, if they are properly diſpoſed, they have a very good Effect, eſpecially during their Continuance in Flower. Theſe ſhould always be planted ſingly at a Diſtance from each other, or from any other Trees; for when they have full room to extend their Branches, they will form a natural Parabola or Cone, ſpreading twelve Feet or more on every Side; and this, in the Compaſs of a few Years: and when they ſtand thus detach'd, every Shoot will produce a Spike of Flowers; ſo that the whole Tree will be covered with Flowers, and make a goodly Shew.

This Tree is propagated by planting the Nuts early in the Spring, after the manner as was directed for the common Cheſtnut, to which I refer the Reader, to avoid Repetition: the Autumn following the Plants may be tranſplanted into a Nurſery, in Rows at three Feet Diſtance, and eighteen Inches aſunder in the Rows, where they may continue three Years; after which time they may be tranſplanted, where they are to remain: the beſt Seaſon for tranſplanting theſe Trees is in Autumn, or during any of the Winter-months, when other deciduous Trees are removed; for this Tree puts out early in the Spring.

In tranſplanting of theſe Trees, we ſhould never ſhorten any of their Branches; but only cut off intirely all ſuch as are ill placed, or grow irregular; for theſe Trees have always a large turgid Bud placed at the Extremity of their Branches, in which is incloſed the Shoot for the ſucceeding Spring; which Bud is of great Service in attracting the Nouriſhment, and promoting the future Growth of the Tree; and it is often obſervable, where their Branches are ſhortened, that there is produced a glutinous Subſtance, almoſt of the Conſiſtence of Turpentine, which often occaſions the Decay of thoſe particular Branches, and ſometimes of the whole Tree

These Trees have ſomething very ſingular in their Growth, *i. e.* that their whole Year's Shoot is commonly performed in three Weeks time; after which it does no more than increaſe in Bulk, and become more firm and ſubſtantial; and all the latter Part of the Summer is occupied in forming and ſtrengthening the Buds for the next Year's Shoots. There is a great Regularity in the natural Growth of theſe Trees; their Under-branches being always greatly extended; and the ſucceeding ones, decreaſing gradually to the Top, form a natural obtuſe Pyramid; which Regularity is by many People greatly diſliked, as appearing too much like thoſe artificial Pyramids, which were formerly ſo much eſteemed and cultivated on ever-green Trees; but are now very juſtly deſpiſed by all curious Perſons; tho' it muſt be allowed, where theſe Trees are rightly diſpoſed in forming of Clumps, &c. their conical Figure has a very good Effect, by rendering ſuch Plantations very agreeable to the Eye at ſome Diſtance, eſpecially when the under Parts of the Trees are hid from Sight by other Trees, which ſurround them.

Theſe Trees were originally brought from *Conſtantinople* into *Europe*. The Laurel and the Horſe-cheſtnut were made Denizens of *England*, at the ſame time, which was about the Year 1610. but altho' they are Natives of ſo warm a Country; yet they are now ſo inur'd to the Cold, as to defy the ſevereſt of our Winters, and grow to be very large Trees, and produce great Quantities of Nuts annually; from which they may be multiplied at Pleaſure. The Fruit of this Tree is very bitter, and of no Uſe amongſt us at preſent; but in *Turky* they give them to Horſes, in their Provender, that are troubled with Coughs, or ſhort-winded, in both which Diſtempers they are ſuppoſed to be very good.

HIPPOLAPATHUM. *Vide* Lapathum.

HIPPOSELINUM. *Vide* Smyrnium.

HIRUNDINARIA. *Vide* Aſclepias.

HOLLOW-ROOT. *Vide* Fumaria.

HOLLY-HOCKS. *Vide* Malva roſea.

HOLLY. *Vide* Aquifolium.

HONEYSUCKLE. *Vide* Caprifolium.

HOPS. *Vide* Lupulus.

HORDEUM, Barley.

The *Characters* are;

It hath a thick Spike: the Calyx, *Huſk, Awn, and Flower, are like thoſe of Wheat or Rye; but the Awns are rough: the Seed is ſwelling in the Middle, and, for the moſt part, ends in a ſharp Point, to which the Huſks are cloſely united.*

The *Species* are;

1. HORDEUM *diſtichum. Ger.* Common long-ear'd Barley.

2 HORDEUM *polyſtichum, vel hybernum. Park.* Winter or ſquare Barley, or Bear Barley; by ſome called Big.

3. HORDEUM *diſtichum, ſpica breviore & latiori, granis confertis. Raii.* Sprat Barley, or Battledore Barley.

Theſe are the Sorts of Barley which are moſt commonly cultivated near *London*; but, beſides theſe three, there are two other Sorts, which are cultivated in *England*; which are the Rath-ripe, and Naked Barley; this laſt is ſometimes called *French* Barley: this makes tolerable good Bread,

Bread, very good Malt, and yields a large Increaſe.

All theſe Sorts of Barley are ſown in the Spring of the Year, in a dry Time; in ſome very dry light Land, the Barley is ſown early in *March*; but, in ſtrong clayey Soils, it is not ſown till *April*, and ſometimes not until the Beginning of *May*; but when it is ſown ſo late, if the Seaſon doth not prove very favourable, it is very late in Autumn before it is fit to mow, unleſs it be the rath-ripe Sort, which is often ripe in nine Weeks from the time of ſowing.

The ſquare Barley or Big is chiefly cultivated in the North of *England*, and in *Scotland*, and is hardier than the other Sorts; but this is ſeldom ſown in the South of *England*, tho' it might be cultivated to good Purpoſe on ſome ſtrong cold clayey Lands, where the other Kinds do not thrive ſo well.

Some People ſow Barley upon Land where Wheat grew the former Year; but when this is practiſed, the Ground ſhould be plowed the Beginning of *October* in a dry time, laying it in ſmall Ridges, that the Froſt may mellow it the better; and this will improve the Land greatly: then in *March* the Ground is plowed again, and laid even where it is not very wet; but in ſtrong wet Lands the Ground ſhould be laid round, and the Furrows made deep to receive the Wet. When this is finiſhed, the Seed ſhould be ſown with a broad Caſt at two Sowings: the firſt being harrowed in once, the ſecond ſhould be harrowed until the Seed is buried: the common Allowance of Seed is four Buſhels to an Acre.

It is a very common Fault with Farmers to ſow too much Grain of all Sorts on their Land; not conſidering, that if the Roots of Corn ſtand very cloſe together, there will not be room for them to put out many Stems; ſo that frequently there is not more than two or three Stalks to a Root; whereas, if the Roots were farther diſtant, there might be ten or twelve, and, on good Land, many more. I have counted upward of ſeventy Stalks of Barley from one Root, which was tranſplanted in a Garden, where the Ground was light, but not rich: and I am ſatisfied by ſeveral Experiments, that where Barley is ſown early upon light Ground, it ſhould not be too thick; for if it is rolled two or three times before it ſtalks, the Roots, by being preſſed, will ſhoot out a greater Number of Stalks; and it will not be ſo liable to lodge with Wet, as the Barley which is ſown thick; ſo muſt conſequently be drawn up much taller, and have weaker Stalks.

When the Barley is ſown, the Ground ſhould be rolled after the firſt Shower of Rain, to break the Clods, and lay the Earth ſmooth; which will render it better to mow, and alſo cauſe the Earth to lie cloſer to the Roots of the Corn, which will be of great Service to it in dry Weather.

Where Barley is ſown upon new broken-up Land, the uſual Method is, to plow up the Land in *March*, and let it lie fallow until *June*; at which time it is plowed again, and ſown with Turneps, which are eaten by Sheep in Winter, by whoſe Dung the Land is greatly improved; and then in *March* following the Ground is plowed again, and ſown with Barley, as before.

There are many People who ſow Clover with their Barley; and ſome have ſown the Lucern with Barley; but neither of theſe Methods is to be commended; for where there is a good Crop of Barley, the Clover or Lucern muſt be ſo weak as not to pay for ſtanding; ſo that the better Way is to ſow the Barley alone without any other Crop among it, and then the Land will be at Liberty for any other Crop, when the Barley is taken off the Ground: but this Practice of ſowing Clover, Rye-graſs, and other Graſs-ſeeds, with Corn, has been ſo long and univerſally eſtabliſhed among Farmers, that there is little Hope of prevailing with thoſe People to alter a Cuſtom which has been handed down to them from their Predeceſſors; altho' there ſhould be many Examples produced, to ſhew the Abſurdity of this Practice.

The time for cutting of Barley is, when the red Colour of the Ears is off, and the Straw turns yellow, and the Ears begin to hang down: in the North of *England* they always reap their Barley, and make it up in Sheaves, as is practiſed here for Wheat; by which Method they do not loſe near ſo much Corn; and it is alſo more handy to ſtack; but this Method cannot ſo well be practiſed where there are many Weeds amongſt the Corn; which is too frequently the Caſe in the rich Lands near *London*, eſpecially in moiſt Seaſons; therefore when this is the Caſe, the Barley muſt lie on the Swarth till all the Weeds are dead: but as it is apt to ſprout in wet Weather, it muſt be ſhaken up, and turned every fair Day after Rain to prevent it. When it is carried, it ſhould be thoroughly dry; otherwiſe, if it be ſtack'd wet, it will turn muſty; or, if too green, it is ſubject to burn in the Mow. The common Produce of Barley is two and an half, or three Quarters on an Acre; but I have ſometimes known four Quarters on an Acre.

HORMINUM, Clary.

The *Characters* are;

It hath a labiated Flower, conſiſting of one Leaf, whoſe upper Lip is ſhort and creſted; but the under one is divided into three Parts: the middle Diviſion is hollow'd like a Spoon: out of the Flower-cup ariſes the Pointal, fixed like a Nail to the hinder Part of the Flower, and attended with four Embryoes, which afterward turn to ſo many roundiſh Seeds, incloſed in the Cup of the Flower.

The *Species* are;

1. HORMINUM *ſylveſtre, lavendulæ flore. C. B. P.* Common *Engliſh* wild Clary, or *Oculus Chriſti*

2. HORMINUM *coma purpurea violacea. J. B.* Clary with a purple violet Top.

3. HORMINUM *ſylveſtre latifolium verticillatum. C. B. P.* Broad-leav'd wild Clary, with whorled Spikes.

4. HORMINUM *pratenſe, flore minimo. Schol. Bot.* Meadow Clary, with a very ſmall Flower.

5. HORMINUM *coma rubra. J. B.* Clary with red Tops.

6. HORMINUM *napi folio. Moriſ. H. Bleſ.* Turnep-leav'd Clary.

7. HORMINUM *Orientale, betonicæ folio acutiſſimo, flore cæruleo. Tourn. Cor.* Eaſtern Clary, with a ſharp-pointed Betony-leaf, and a blue Flower.

8. HORMINUM *Orientale, betonicæ folio acutiſſimo, flore albo. Tourn. Cor.* Eaſtern Clary, with a ſharp-pointed Betony-leaf, and a white Flower.

9. HORMINUM *Orientale latifolium glutinoſum, flore partim albo, partim purpuraſcente. Tourn. Cor.* Eaſtern Clary, with broad glutinous Leaves, and a Flower partly white, and partly purpliſh.

10. HORMINUM *Orientale latifolium glutinoſum, flore albo. Tourn. Cor.* Eaſtern Clary, with broad glutinous Leaves, and a white Flower.

11. HORMINUM *Orientale, betonicæ folio anguſtiore & inodoro. Tourn. Cor.* Eaſtern Clary, with a

narrow Betony-leaf, without Smell.

12. HORMINUM *Orientale, lamii folio Tourn. Cor.* Eaſtern Clary, with a Dead-nettle-leaf.

13. HORMINUM *Orientale, foliis ſclareæ, flore albo parvo. Tourn. Cor.* Eaſtern Clary, with the Leaves of *Sclarea*, and a ſmall white Flower.

14. HORMINUM *Orientale, foliis rugoſis & verrucoſis anguſtis, flore albo. Tourn. Cor.* Eaſtern Clary, with rough narrow warted Leaves, and a white Flower.

15. HORMINUM *verbenæ laciniis, anguſtifolium. Triumph.* Clary with a narrow jagg'd Vervain-leaf.

16. HORMINUM *Orientale annuum, ſativo ſimile, coma carens, flore violaceo. Tourn. Cor.* Annual Eaſtern Clary, like the Garden-clary, wanting Tops, and a violet-colour'd Flower.

The firſt of theſe Plants is found wild upon dry Banks, in divers Parts of *England*; and is ſeldom cultivated in Gardens: the Seeds of this Kind are by ſome People greatly eſteemed for clearing the Eyes of any thing that may have gotten into them; which is effected by the glutinous Quality of the Seed, which, when put into the Eye, and moved about, will faſten any thing thereto which it meets with, and thereby it is taken out.

The ſecond and fifth Sorts are beauful annual Plants, and deſerve to have a Place in a good Garden, for the Oddneſs of their Spikes, which in the ſecond Sort, have fine purple-violet-colour'd Tops; and thoſe of the fifth are red: but the third Sort is not very beautiful, and is chiefly cultivated in Botanic Gardens, with many other Varieties of leſs Note.

The fourth and ſixth Sorts are not Natives of *England*; but grow in *France* and *Italy*; from whence their Seeds have been brought, and the Plants are preſerved in Botanic Gardens, for Variety: but they are Plants of no great Beauty; ſo are rarely cultivated in other Gardens.

The ſeventh, eighth, ninth, tenth, eleventh, twelfth, thirteenth, fourteenth, and ſixteenth Sorts were diſcovered by Dr. *Tournefort*, in the *Levant*; from whence he ſent their Seeds to the Royal Garden at *Paris*, where they were cultivated; and have been ſince diſtributed to many curious Botanic Gardens. Theſe are all of them very hardy Plants, which will live in the open Air in *England*, and are all of them abiding Plants, except the laſt, which is an Annual; ſo that the Seeds of this Kind muſt be ſown every Spring, in the Place where they are to remain.

Theſe may all be propagated by ſowing their Seeds in the Spring in an open Situation; and when the Plants are come up, they ſhould be either tranſplanted out to the Diſtance of a Foot ſquare, or hoed out to the ſame Diſtance, obſerving to keep them clear from Weeds, which is all that is needful to be regarded in their Culture.

The firſt and third Sorts are abideing Plants; their Roots continuing ſeveral Years; but the ſecond and fifth Sorts will decay ſoon after the Seeds are perfected. If the Seeds of theſe Kinds are permitted to ſhed upon the Ground when they are ripe, the Plants will come up in Autumn, abide the Winter, and flower early the ſucceeding Summer; and their Flowers will be much larger than thoſe which are ſown in the Spring. For Garden-clary, ſee *Sclarea*.

HORNBEAM. *Vide* Carpinus.

HORSE-CHESTNUT. *Vide* Hippocaſtanum.

HORSE-DUNG is of great Uſe to make Hot-beds for the raiſing all Sorts of early Garden-crops, as Cucumbers, Melons, Aſparagus, Sallading, *&c.* for which Purpoſe no other Sort of Dung will do ſo well, this fermenting the ſtrongeſt; and, if mix'd with long Litter, and Sea-coal Aſhes, in a due Proportion, will continue its Heat much longer than any other Sort of Dung whatſoever; and afterward, when rotted, becomes an excellent Manure for moſt Sorts of Lands, more eſpecially for ſuch as are of a cold Nature; and for ſtiff clayey Lands, when mixed with Sea-coal Aſhes, and the Cleanſings of *London* Streets, it will cauſe the Parts to ſeparate much ſooner than any other Compoſt will do; ſo that where it can be obtained in Plenty, I would always recommend the Uſe of it for ſuch Lands.

HOT-BEDS are of general Uſe in theſe Northern Parts of *Europe*, without which we could not enjoy ſo many of the Products of warmer Climates as we do now; nor could we have the Tables furniſhed with the ſeveral Products of the Garden, during the Winter and Spring-months, as they are at preſent in moſt Parts of *England*, better than in any other Country in *Europe*; for altho' we cannot boaſt of the Clemency of our Climate, yet *England* is better furniſhed with all Sorts of eſculent Plants for the Table, much earlier in the Seaſon, and in greater Quantities, than any of our Neighbours; which is owing to our Skill in Hot-beds.

The ordinary Hot-beds which are commonly us'd in the Kitchen-gardens, are made with new Horſe-dung, in the following manner:

1ſt, Provide a Quantity of new Dung from the Stable (in which there ſhould be Part of the Litter or Straw which is commonly uſed in the Stable), in proportion to the Length of the Bed intended; which, if early in the Year, ſhould not be leſs than one good Load for each Light; this Dung ſhould be thrown up in an Heap, mixing therewith a few Sea-coal Aſhes, which will be of Service to continue the Heat of the Dung; it ſhould remain ſix or ſeven Days in this Heap; then it ſhould be turned over, and the Parts well mixed together, and caſt into an Heap again, where it may continue five or ſix Days longer; by which time it will have acquir'd a due Heat: then in ſome well-ſheltered Part of the Garden you muſt dig out a Trench in Length and Width, proportionably to the Frames you intend it for; and, if the Ground be dry, about a Foot, or a Foot and an half deep; but if wet, not above ſix Inches; then wheel the Dung into the Opening, obſerving to ſtir every Part of it with a Fork, and lay it exactly even and ſmooth thro' every Part of the Bed; as alſo to lay the Bottom-part of the Heap (which is commonly free from Litter) upon the Surface of the Bed; this will prevent the Steam from riſeing ſo plentifully as it would otherwiſe do: and if it be deſigned for a Bed to plant out Cucumbers to remain for good, you muſt make an Hole in the Middle of each Light about ten Inches over, and ſix deep, which ſhould be fill'd with good freſh Earth, thruſting a Stick into the Middle, to ſhew the Place where the Hole is intended; then cover the Bed all over with the Earth which was taken out of the Trench about four Inches thick, and cover it with the Frame, letting it remain until the Earth be warm, which commonly happens in three or four Days after the Bed is made; then you may place the Plants therein, as is directed for each Kind under their proper Heads.

But if your Hot bed be deſigned for other Plants, there need be no Holes made in the Dung; but after having ſmoothed the Surface with a Spade, you ſhould cover the Dung about three or four Inches thick with good Earth, putting on the Frames and Glaſſes as before.

In the making of theſe Hot-beds, it muſt be carefully obſerved to ſettle the Dung cloſe with a Fork; and if it be pretty full of long Litter, it ſhould be equally trod down cloſe in every Part, otherwiſe it will be ſubject to heat too violently; and conſequently the Heat will be much ſooner ſpent, which is one of the greateſt Dangers this Bed may be liable to. During the firſt Week or ten Days after the Bed is made, you ſhould cover the Glaſſes but ſlightly in the Night, and in the Day-time carefully raiſe them to let out the Steam, which is ſubject to riſe very copiouſly while the Dung is freſh: but as the Heat abates, ſo the Covering ſhould be increaſed; otherwiſe the Plants in the Beds will be ſtinted in their Growth, if not intirely deſtroyed. In order to remedy this Evil, if the Bed be very cold, you muſt put a pretty good Quantity of new hot Dung round the Sides of it, which will add a freſh Heat thereto, and cauſe it to continue a conſiderable time after; and as the Spring advances, the Sun will ſupply the Loſs of the Dung's Heat; but then it will be adviſeable to lay ſome Mowings of Graſs round the Sides of the Bed, eſpecially if the Nights ſhould prove cold, as it often happens in *May*, which is many times, even at that Seaſon, very hurtful to tender Plants on Hot-beds.

But altho' the Hot-bed I have deſcribed is what the Kitchen-gardeners commonly uſe, yet thoſe made with Tanners Bark are much more preferable, eſpecially for all tender Exotic Plants or Fruits which require an even Degree of Warmth to be continued for ſeveral Months; which is what cannot be ſo well effected by Horſe-dung. The Manner of making theſe Beds is as follows:

You muſt dig a Trench in the Earth about three Feet deep, if the Ground be dry; but if wet, it muſt not be above a Foot deep at moſt, and muſt be raiſed two Feet above-ground. The Length muſt be proportion'd to the Frames intended to cover it; but that ſhould never be leſs than eleven or twelve Feet, and the Width not leſs than ſix, which is but a ſufficient Body to continue the Heat. This Trench ſhould be bricked up round the Sides to the abovementioned Height of three Feet, and ſhould be fill'd in the Spring with freſh Tanners Bark (*i. e.* ſuch as the Tanners have lately drawn out of their Vats, after they have us'd it for tanning Leather) which ſhould be laid in a round Heap for three or four Days before it is put into the Trench, that the Moiſture may the better drain out of it, which, if detain'd in too great a Quantity, will prevent its Fermentation; then put it into the Trench, and gently beat it down equally with a Dung-fork: but it muſt not be trodden, which would alſo prevent its heating, by ſettling it too cloſe: then you muſt put on the Frame over the Bed, covering it with the Glaſſes; and in about ten Days, or a Fortnight, it will begin to heat; at which time you may plunge your Pots of Plants or Seeds into it, obſerving not to tread down the Bark in doing of it.

A Bed thus prepared (if the Bark be new, and not ground too ſmall) will continue in a good Temper of Warmth for two or three Months; and when you find the Heat decline, if you ſtir up the Bark again pretty deep, and mix a Load or two of freſh Bark amongſt the old, it will cauſe it to heat again, and preſerve its Warmth two or three Months longer: there are many People who lay ſome hot Horſe-dung in the Bottom of the Trench, under the Bark, to cauſe it to heat: but this is what I would never practiſe, unleſs I wanted the Bed ſooner than the Bark would heat of itſelf; and then I would put but a ſmall Quantity of Dung at Bottom; for that is ſubject to make it heat too violently, and will occaſion its loſeing the Heat ſooner than ordinary; and there will never be any Danger of the Bark's heating, if it be new, and not put into the Trench too wet, tho' it may ſometimes be a Fortnight or more before it acquires a ſufficient Warmth; but then the Heat will be more equal and laſting.

The Frames which cover theſe Beds ſhould be proportion'd to the ſeveral Plants they are deſign'd to contain: for Example, If they are to cover the *Anana* or Pine-apple, the Back-part of the Frame ſhould be three Feet high, and the Lower-part fifteen Inches, which will be a ſufficient Declivity to carry off the Wet; and the Back-ſide will be high enough to contain the Plants that are in Fruit, and the Lower-ſide will be ſufficient for the ſhorteſt Plants; ſo that, by placing them regularly according to their Height, they will not only have an equal Diſtance from the Glaſſes, but alſo appear much handſomer to the Sight. And altho' many People make their Frames deeper than what I have allotted, yet I am fully perſuaded, that where there is but Height enough to contain the Plants, without bruiſing their Leaves, it is much better than to allow a larger Space; for the deeper the Frame is made, the leſs will be the Heat of the Air incloſ'd therein, there being no artificial Warmth but what the Bark affords, which will not heat a large Space of Air: and as the Pine-apple requires to be conſtantly kept very warm, in order to ripen the Fruit well; ſo it will be found, upon Trial, that the Depth I have allow'd will anſwer that Purpoſe better than a greater.

But if the Bed be intended for taller Plants, then the Frame muſt be made in Depth proportionable thereto: tho' if it be for ſowing of Seeds, the Frame need not be above fourteen Inches high at the Back, and ſeven Inches deep in the Front, by which means the Heat will be much greater; and this is commonly the Proportion allow'd to the Frames commonly made uſe of in the Kitchen-gardens. As to their Length, that is generally according to the Fancy of the Owner; but they uſually contain three Lights each, which is in the Whole about eleven Feet in Length; tho' ſometimes they are made to contain four Lights; but this is too great a Length: the Frames thus made are not ſo convenient to remove, as when they are ſhorter, and are more ſubject to decay at their Corners. Some indeed have them to contain but two Lights, which is very handy for raiſing Cucumber and Melon Plants while young; but this is too ſhort for a Bark-bed, as not allowing room for a proper Quantity of Bark to continue a Warmth for any conſiderable time, as was before mentioned; but for the other Purpoſes one or two ſuch Frames are very convenient.

As to thoſe Frames which are made very deep, it is much better to have them contrived to take aſunder at the four Corners; ſo that they may be removed with Eaſe; otherwiſe it will be very difficult to take the Frame off, when there is Occaſion to put in new Bark, or take out the old. The Manner of makeing theſe Frames is generally known, or may be much better conceiv'd by ſeeing them than can be expreſs'd in Writing: therefore I ſhall forbear ſaying any thing more on this Head.

HOTTONIA, Water-violet.

The *Characters* are;

It hath a roſe-ſhaped Flower conſiſting of one Leaf, which is divided into five Parts almoſt to the Bottom: in the Centre of the Flower ariſes the Pointal, which afterward becomes a cylindrical Fruit, in which are contained ſeveral ſpherical Seeds.

We have but one *Kind* of this Plant; *viz.*

Hottonia. *Boerh. Ind. alt.* Water-violet.

This Plant is very common in deep ſtanding Waters and Ditches, in ſeveral Parts of *England.* The Leaves of this Plant appear on the Surface of the Water the Beginning of *April*, and in *May* the Flowers ariſe on pretty long naked Stalks, growing in a Spike. Theſe Flowers are of a fine Roſe-colour, which, together with their fine-cut Leaves, make a beautiful Appearance on the Water.

It may be propagated in deep ſtanding Waters, by procuring its Seeds, when they are ripe, from the Places of their natural Growth; which ſhould be immediatly dropp'd into the Water, where they are deſigned to grow; and the Spring following they will appear; and if they are not diſturbed, they will ſoon propagate themſelves in great Plenty.

HURA, The Sand-box-tree.

The *Characters* are;

It hath Male and Female Flowers on the ſame Plant: the Male Flowers conſiſt of one Leaf, which is funnel-ſhaped, having a long incurved Tube; but is ſpread open at the Brim, where it is ſlightly cut into twelve Parts: in the Bottom of the Tube are placed ſeveral ſhort Stamina, *which are collected together: the Female Flowers have the ſame Figure with the Male, but have no* Stamina; *the Centre of the Flower being occupied by the ſhort round compreſſed Pointal, which afterward becomes a round Fruit compreſſed at both Ends, having twelve deep Furrows, and as many different Cells, each containing one round compreſſed Seed: the Fruit, when ripe, burſts open with great Elaſticity, and caſts the Seeds abroad.*

We know but one Sort of this Plant; *viz.*

Hura *Americana, abutili Indici folio. H. Amſt. American* Hura, with a Leaf like the *Indian* Abutilon. This is ſometimes called *Jamaica* Walnuts, and the Sand-box-tree; and by others *Warnelia* and *Havelia.*

This Shrub is a Native of the *Spaniſh Weſt-Indies*; from whence the Seeds have been brought into ſeveral of the *Britiſh* Iſlands in the *Weſt-Indies*; where the Inhabitants cultivate theſe Plants in their Gardens, by way of Curioſity. It riſes to the Height of fourteen or ſixteen Feet, and divides toward the Top into ſeveral Branches, which are adorned with large Leaves indented on their Edges, and terminating in a Point. Theſe Leaves, as alſo the younger Branches, are of a deep-green Colour, and are full of a milky Juice, which iſſues out on their being broken or bruiſed. This Juice is extremely corroſive. The Fruit of this Plant, if ſuffered to remain on till they are fully ripe, burſt in the Heat of the Day with a violent Exploſion, makeing a Noiſe like the firing of a Piſtol; which occaſioned its being, by former Writers, called *Arbor crepitans*; *i.e.* the farting Tree; and hereby the Seeds are thrown about to a conſiderable Diſtance. Theſe Seeds, when green, vomit and purge, and are ſuppoſed to be ſomewhat akin to the *Nux Vomica*.

The Seeds of this Plant were ſent from *Carthagena*, in *New Spain*, by the late Dr. *William Houſtoun*; and ſince, there have been many of the Seeds ſent into *England* from *Barbados*, where there are great Numbers of the Plants cultivated in the Gardens of the Curious.

It is propagated by Seeds, which ſhould be ſown early in the Spring, in Pots filled with light rich Earth, and plunged into an Hot-bed of Tanners Bark. If the Seeds are freſh, the Plants will appear in about five Weeks after the Seeds are ſown; and when the Plants are about four Inches high, they ſhould be tranſplanted each into a ſeparate ſmall Pot filled with light rich Earth, and plunged again into the Hot-bed of Tanners Bark; and muſt be afterward treated in the ſame manner as is directed for other tender Exotic Plants, till the Autumn, at which time they muſt be removed into the Bark-ſtove, and plunged in the warmeſt Part thereof: during the Winter-ſeaſon they muſt have frequent Watering; but it muſt not then be given in too great Quantities: they muſt alſo be kept very warm, otherwiſe they will not live in this Country. In Summer they muſt have a large Share of freſh Air in warm Weather; but they muſt not be removed into the open Air; for they are too tender to live abroad in the warmeſt Part of the Year in this Country.

This Plant is now pretty common in the *Engliſh* Gardens, where there are Collections of tender Plants preſerved; ſome of which are grown to the Height of twelve or fourteen Feet; and many of them have produced Flowers; but there has not been any of their Fruit produced as yet in *England*.

As theſe Plants have ample Leaves, which are of a beautiful green Colour, they afford an agreeable Variety among other tender Exotic Plants in the Stove; for where they are kept warm, and duly refreſhed with Water, they retain their Leaves all the Year in Verdure.

The Fruit of this Plant is, by the Inhabitants of the *Weſt-Indies*, cut open on the Side where the Footſtalk grew, and the Seeds carefully taken out; after which, the Shells are uſed as Standiſhes to contain Sand for Writing; which gave Riſe to the Name of Sand box. When theſe Fruit are brought intire into *England*, it is very difficult to preſerve them; for when the Heat of the Summer comes on, they uſually burſt with an Exploſion, and ſcatter their Seeds about.

HYACINTHUS, Hyacinth, or Jacinth.

The *Characters* are;

It hath a bulbous Root: the Leaves are long and narrow: the Stalk is upright and naked, the Flowers growing on the upper Part in a Panicle: the Flowers conſiſt each of one Leaf, are naked, tubuloſe, and cut into ſix Diviſions at the Brim, which are reflexed: the Ovary becomes a roundiſh Fruit with three Angles, which is divided into three Cells, that are filled with roundiſh Seeds.

The *Species* are;

1. HYACINTHUS *Anglicus, flore cœruleo. Ger.* Blue *Engliſh* Hair-bells.

2. HYACINTHUS *Anglicus, flore albo. Ger.* White *Engliſh* Hair-bells.

3. HYACINTHUS *Anglicus, flore incarnato.* Fleſh-colour'd *Engliſh* Hair-bells.

4. HYACINTHUS *Orientalis brumalis præcociſſimus, flore albo. Boerh. Ind.* The earlieſt white Oriental Hyacinth, commonly called *Januarius*

5. HYACINTHUS *Orientalis brumalis, flore pallide cæruleo. Boerh. Ind.* Oriental Jacinth, with a pale-blue Flower, commonly call'd The Imperial.

6. HYACINTHUS *Orientalis albus primus. C. B.* Common Oriental Jacinth, with a white Flower.

7. HYACINTHUS *Orientalis major præcox, dictus Zimbul Indi. Park. Par.* The great Oriental Jacinth, commonly called Zimbul Indi.

8. HYACINTHUS *Orientalis maximus, flore amœne cæruleo, polyanthus. H. R. P.* The greateſt Eaſtern Jacinth, with many Flowers of a fine blue Colour.

9. HYACINTHUS *Orientalis, flore pleno cæruleo, vel purpureo-violaceo. Park. Par.* The double blue Oriental Jacinth.

10. HYACINTHUS *Orientalis candidiſſimus, flore pleno. Park. Par.* The very white double Oriental Jacinth.

11. HYACINTHUS *Orientalis, multiplici flore pallide incarnatus. H. L.* Double Oriental Jacinth, with a pale fleſh-colour'd Flower, commonly call'd The Pulchra.

12. HYACINTHUS *Orientalis, flore pleno cæruleo-purpureo, clavo longo, petalis modice reflexis. Boerh. Ind.* Double blue Oriental Jacinth, with a long Style, and the Petals moderately reflex'd, commonly call'd The Double Cardinal.

13. HYACINTHUS *Orientalis, flore pleniſſimo intus albo, eleganter roſeo, clavo conico obtuſo, petalis valde reflexis. Boerh. Ind.* The moſt double Oriental Jacinth, with a white Flower of an elegant Roſe-colour in the Middle, and the Petals greatly reflexed, commonly call'd The King of *Great Britain*.

14. HYACINTHUS *Orientalis, flore pleniſſimo candidiſſimo toto, & intus clavo conico obtuſo, petalis valde reflexis. Boerh. Ind.* The moſt double Oriental Jacinth, with a pure white Flower, and the Petals greatly reflexed, commonly called The Queen of *Great Brttain*.

15. HYACINTHUS *Orientalis, flore pleno lacteo, lituris carneis, clavis longis. Boerh. Ind.* Double Oriental Jacinth, with a milk-coloured Flower ſtreak'd with a pale Red, commonly call'd *Claudius Albinus*.

16. HYACINTHUS *Orientalis, flore pleniſſimo carneo longiſſimo, intus roſeo, petalis valde reflexis. Boerh. Ind.* The moſt double Oriental Jacinth, with a fleſh-colour'd Flower ſtreak'd with a Roſe-colour, and the Petals greatly reflexed, commonly called *Apollo*.

17. HYACINTHUS *Orientalis, flore pleno ſquallide candido, clavo ad baſin utriculato longo, petalis valde reflexis. Boerh. Ind.* Double Oriental Jacinth, with a dirty-white Flower, and reflexed Petals, commonly called Agath Mignon.

18. HYACINTHUS *Orientalis, flore pleniſſimo albo, pauxillo carnei admiſto, clavo longo anguloſo plano, ore ampliſſimo. Boerh. Ind.* Double Oriental Jacinth, with a Flower intermixed with very little fleſh-coloured Spots, commonly called *Claudius Civilis*.

19. HYACINTHUS *Orientalis, flore pleniſſimo carneo, & corallino rubro, clavo craſſo brevi, petalis maxime reflexis. Boerh. Ind.* Oriental Jacinth, with a very double red coral-colour'd Flower, and the Petals

greatly reflexed, commonly called Coraliine.

20. Hyacinthus *Orientalis, flore pleniſſimo candidiſſimo, in fundo oris roſeo. Boerh. Ind.* Oriental Jacinth, with a very double pure white Flower, and the Bottom of the Rim of a Roſe-colour, commonly call'd The Queen of Flowers.

21. Hyacinthus *Orientalis, flore pleniſſimo candidiſſimo, petalis anguſtis, & magis acutis.* Oriental Jacinth, with a very double pure white Flower, with narrow ſharp-pointed Petals, commonly called The King of Flowers.

22. Hyacinthus *Orientalis, flore pleniſſimo candidiſſimo toto, clavo conico, petalis maxime reflexis, caule & flore maximis. Boerh. Ind.* Oriental Jacinth, with a very double white Flower, and the Petals very much reflexed, and large Stalks and Flowers, commonly called *Kaiſar's* white Jewel.

23. Hyacinthus *Orientalis, flore pleniſſimo candido carneo, lituris rubellis, clavo breviſſimo craſſiſſimo. Boerh. Ind.* Oriental Jacinth, with double white Flowers ſtreak'd with Red, commonly call'd The Princeſs Royal.

Beſides theſe here mentioned, there are a great Variety of fine double Hyacinths, with beautiful variegated Flowers, moſt of which have Names impoſed on them according to the Fancy of their Owners; and ſome of theſe are highly eſteemed by the Floriſts in *Holland*, where, according to their printed Catalogues, they have many Flowers which are valued at five, ſix, ſeven, eight, or ten Pounds *per* Root: but as theſe are Varieties which have been obtained from Seeds, the Number of them is continually increas'd where People conſtantly ſow of their Seeds; and thoſe new Flowers which are rais'd, if they are large, beautiful, and very double, will always be much valu'd at firſt, until there has been a good Number of Roots obtained from them; after which they conſtantly decreaſe in their Value according to their Plenty. But to enumerate all the Sorts that are now printed in the *Dutch* Catalogues, would be to no Purpoſe in this Place: therefore I ſhall proceed to their Culture.

The firſt of theſe Species is a Native of *England*, growing in Woods, and under Hedges, in divers Parts, but eſpecially near *London*. The two next-mentioned are Varieties which have been accidentally obtained from the firſt, from which they differ only in the Colour of their Flowers. The twenty next-mentioned are all of them Varieties of the Oriental Hyacinths, which were originally brought from *Aſia*; but by the Induſtry of the Floriſts in *Holland* and *Flanders*, they have been ſo much improv'd, as to become one of the moſt ornamental Flowers of the Spring: and as they continue ſowing Seeds annually of theſe Flowers, they not only increaſe the Numbers of their Flowers, but have yearly ſome extraordinary Beauties appear; which are, according to their Stature, Figure, and other Properties, highly eſteem'd; and are ſometimes bought, at a very great Expence, by the curious Delighters in theſe Beauties.

All the different Sorts of Hyacinths are propagated by Seeds or Off-ſets from the old Bulbs: the former Method has been but little practiſed in *England* till very lately; but in *Holland* and *Flanders* it hath been follow'd for many Years, whereby they have obtain'd a very great Variety of the moſt beautiful Flowers of this Kind; and it is owing to the Induſtry of the Floriſts in thoſe Countries, that the Lovers and Delighters

lighters in Gardening are ſo agreeably entertain'd, not only with the curious Variety of this, but of moſt other bulbous-rooted Flowers; few other Floriſts thinking it worth their Trouble to wait four or five Years for the Flowers of a Plant, which when produced, perhaps there might not be one in forty that may merit to be preſerv'd: but they do not conſider, that it is only the Loſs of the three or four firſt Years after ſowing; for if they continue ſowing every Year after they begin, there will be a Succeſſion of Flowers annually, which will conſtantly produce ſome Sorts that may be different from what they have before ſeen; and new Flowers being always the moſt valuable to ſkilful Floriſts (provided they have good Properties to recommend them), it will always be a ſufficient Recompence for their Trouble.

The Method of raiſing theſe Flowers from Seed is as follows: Having provided yourſelf with ſome good Seed (which ſhould be ſaved from either ſemi-double, or ſuch ſingle Flowers as are large, and have good Properties), you muſt have a Parcel of ſquare ſhallow Boxes or Pots, which muſt be filled with freſh light ſandy Soil, laying the Surface very level; then ſow your Seed thereon as equally as poſſible, covering it about half an Inch thick with the ſame light Earth: the time for this Work is about the Beginning of *Auguſt*. Theſe Boxes or Pots ſhould be placed where they may enjoy the morning Sun, only until the Middle or Latter-end of *September*; at which time they ſhould be removed into a warmer Situation; and towards the End of *October* they ſhould be placed under a common Hot-bed frame; where they may remain during the Winter and Spring Months, that they may be protected from hard Froſts; though they ſhould be expoſed to the open Air when the Weather is mild, by taking off the Glaſſes. In *February* the young Plants will begin to appear above-ground; at which time they muſt be carefully ſcreen'd from Froſts, otherwiſe they will prove very injurious to them: but you muſt never cover them at that Seaſon but in the Night, or in very bad Weather; for when the Plants are come up, if they are cloſe cover'd, they will draw up very tall and ſlender, and thereby prevent the Growth of their Roots. In the Middle of *March*, if the Weather proves good, you may remove the Boxes out of the Frame, placing them in a warm Situation, but not too near a Wall; obſerving, if the Seaſon be dry, to refreſh them now-and-then with a little Water, as alſo to keep them very clear from Weeds; which would ſoon overſpread the tender Plants, and deſtroy them, if permitted to remain.

Toward the Latter-end of *April*, or the Beginning of *May*, theſe Boxes ſhould be removed into a cooler Situation: for the Heat of the Sun at that Seaſon will be too great for theſe tender Plants, cauſing their Blades to decay much ſooner than they would, if they were ſcreen'd from its Violence. In this ſhady Situation they ſhould remain during the Heat of Summer, obſerving to keep them conſtantly clear from Weeds: but you muſt not place them under the Dripping of Trees, &c. nor ſhould you give them any Water after their Blades are decay'd; for that will infallibly rot the Roots. About the Middle or Latter-end of *Auguſt* you ſhould ſift a little light rich Earth over the Surface of the Boxes; and then remove them again into a warmer Situation, and treat them, during the Winter, Spring, and Summer Months, as was before directed: and about the Middle of *Auguſt* you ſhould prepare a Bed of light rich ſandy Soil, in proportion to the Quantity of your Seedling-plants; and having levell'd the Surface very even, you ſhould take out the Earth from the Boxes in which your Plants were rais'd, into a Sieve, in order to get out all the Roots, which by this time (if they have grown well) will be about the Thickneſs of a ſmall Quill. Theſe Roots ſhould be placed upon the Bed at about two or three Inches aſunder, obſerving to ſet the Bottom-part of their Roots downward; then cover them over two Inches thick with the ſame light Earth: but as it will be impoſſible to get all the ſmall Roots out of the Earth in the Boxes, you ſhould ſpread the Earth upon another Bed equally, and cover it over with light Earth; by which Method you will not loſe any of the Roots, be they ever ſo ſmall.

Theſe Beds muſt be arched over with Hoops; and in very hard froſty Weather they muſt be cover'd with Mats, *&c.* to protect them from Froſt; and in the Spring, when the green Leaves are above-ground, if the Weather ſhould be very dry, you muſt refreſh them with Water; but do this ſparingly; for nothing is more injurious to theſe Bulbs, than too great Quantities of Moiſture. During the Summer-ſeaſon you muſt conſtantly keep the Beds clear from Weeds; but after the Blades are decay'd, you muſt never give them any Water: and in Autumn you ſhould ſtir the Surface of the Bed with a very ſhort Hand-fork; being exceeding careful not to thruſt it ſo deep as to touch the Roots; which, if hurt, are very ſubject to periſh ſoon after. Then ſift a little freſh light rich Earth over the Bed about an Inch thick, or ſomewhat more; and in Winter cover them again (as was before directed). In this Bed the Roots may continue until they flower, which is commonly five Years after ſowing, obſerving to treat them, both in Summer and Winter, as before.

When their Flowers begin to ſhew themſelves, you ſhould mark all ſuch as appear to have good Properties, by thruſting a ſmall Stick down by each Root; which Roots, at the time for taking them up, ſhould be ſelected from the reſt, and planted by themſelves: tho' I would by no means adviſe the rejecting any of the other Roots, until they have blown two Years; before which you cannot be aſcertained of their Value. When the green Leaves of theſe Plants begin to decay, their Roots muſt be taken up; and the Earth of the Bed being rais'd into a Ridge, the better to ſhoot off the Moiſture, they ſhould be laid into the Earth again in an horizontal Poſition, leaving the green Leaves hanging downwards from the Roots, whereby the great Moiſture contained in their very ſucculent Leaves and Flower-ſtalks is exhaled, and prevented from entering the Roots; which, when ſuffered to return into them, is very often the Cauſe of their rotting. In this Ridge the Roots ſhould remain until the Leaves are quite dried off, when they muſt be taken up; and after being cleared of all manner of Filth, which would be hurtful to them, they muſt be laid up in Boxes; where they may be preſerved dry until *September*, which is the proper Seaſon for planting them again. The Method of doing this ſhall be hereafter mentioned, when we treat of the Management of old Roots.

I ſhall now proceed to the Culture of ſuch Hyacinths as have either been obtained from *Holland*, or are of our own Product from Seeds, that are very beautiful, and worthy to be preſerved in Collections of good Flowers; and it hath been the want of Skill in the Management of theſe noble Flowers, which has occaſion'd the ill Succeſs moſt People have had with them in *England*; whereby they are almoſt intirely neglected, ſuppoſing their Roots degenerate after they have flower'd in *England*: which is a great Miſtake; for were the Roots managed with the ſame Art as is practis'd in *Holland*, I am fully convinced they would thrive full as well in *England* as there, or elſewhere, as I have experienced; for, from ſome Hundreds of Roots which I have received from *Holland* at two or three different times, I have increaſed them to almoſt double the Number of ſtrong Roots; all which flower'd in the Spring *Anno* 1730. ſtronger than they did when I firſt received them: and I dare ſay they were as large, and produced as many Flowers on their Stems, as if they were in *Holland*.

The Soil in which theſe Flowers ſucceed beſt, is a light ſandy freſh rich Earth, which may be compos'd after the following manner: Take half freſh Earth from a Common or Paſture-land which is of a ſandy Loam; this ſhould not be taken above eight or nine Inches deep at moſt; and if you take the Turf or Green-ſward with it, it will ſtill be better, provided you have time to let it rot; to this you ſhould add a Fourth-part of Sea-ſand, and the other Fourth-part of rotten Cow-dung: mix theſe well together, and caſt it into an Heap, where it may remain until you uſe it; obſerving to turn it over once in three Weeks, or a Month. If this Compoſt be made two or three Years before it be uſed, it will be much the better: but if you are obliged to uſe it ſooner, then it ſhould be oftener turned, that the Parts may the better unite.

This Soil ſhould be laid two Feet deep on the Beds which are deſigned for your Hyacinths; and you may lay a little rotten Cow-dung or Tanners Bark at the Bottom, which may be within Reach of the Fibres; but it ſhould by no means touch the Bulb. If the Soil be very wet, where theſe Beds are made, you ſhould raiſe them ten or twelve Inches above the Surface; but if it be dry, they need not be raiſed above three or four Inches.

The manner of preparing the Beds is as follows: Firſt, take all the former old Earth out of the Bed to the Depth you intend, which ſhould be three Feet; then ſpread a little rotten Dung or Tan in the Bottom, laying it very level; upon this you ſhould lay the above-mentioned Earth twelve or fifteen Inches thick, levelling it very even: then ſcore out the Diſtances for the Roots, which ſhould be eight Inches ſquare, in ſtrait Rows each Way; after which, place your Roots exactly in the Squares, obſerving to ſet the Bottom part downward; then cover the Roots ſix Inches deep with the ſame prepared Earth; being very careful, in doing of this, not to diſplace any of them: and if the Tops of theſe Beds are made a little rounding, to ſhoot off the Wet, it will be of Service, provided they are not made too high, which is a Fault the other way.

The beſt Seaſon for planting theſe Roots is toward the Middle or Latter-end of *September*, according to the Earlineſs or Lateneſs of the Seaſon, or the Weather which then happens:

pens: but I would adviſe you, never to plant them when the Ground is extreme dry, unleſs there be a Proſpect of ſome Rain ſoon after; for if the Weather ſhould continue dry for a conſiderable time after, the Roots would receive a Mouldineſs, which would certainly deſtroy them.

Theſe Beds will require no farther Care until the Froſt comes on ſevere, at which time they ſhould have ſome rotten Tan ſpread over the Bed, about four Inches thick; and if the Alleys on each Side of the Bed are filled up, either with rotten Tan, Dung, or Sand, it will prevent the Froſt from penetrating the Ground to the Roots, and ſecure them from being deſtroyed: but when the Winters prove very ſevere, it will alſo be proper to have ſome Peas-haulm, or ſuch-like Covering, laid over them, which will keep out the Froſt better than Mats; and lying hollow, will admit the Air to the Surface of the Ground, and alſo permit the Exhalations to paſs off, whereby the Earth will remain dry, and prevent the Roots from rotting; which has often happened when the Beds have been too cloſe covered. But you muſt obſerve to take off this Covering whenever the Weather is mild, and only let it continue on in very hard Froſts; for a ſmall Froſt cannot injure the Roots before the green Leaves appear above-ground, which is ſeldom before the Beginning of *February*; at which time the Beds muſt be arched over with Hoops, that they may be covered either with Mats, Canvas, or ſome other light Covering, to prevent the Froſt from injuring the Buds as they ariſe above-ground: but theſe Coverings muſt be conſtantly taken off every Day when the Weather is mild, otherwiſe the Flower-ſtems will be drawn up to a great Height, and become very weak; and the Pedicles of the Flowers will be long and ſlender, and ſo rendered incapable of ſupporting the Bells: which is a great Diſadvantage to the Flowers; for one of their greateſt Beauties conſiſts in the regular Diſpoſition of their Bells. When theſe Hoops are fixed over the Beds, the rotten Tan ſhould be taken off them; in the doing of which, great Care ſhould be taken not to bruiſe or injure the Leaves of the Hyacinths, which by that time will be beginning to break out of the Ground with the Flower-ſtem; therefore the Tan ſhould be removed by the Hands, or, if any Inſtrument is uſed in the doing of it, there muſt be great Caution.

When the Stems of the Flowers are advanced to their Height, before the Flowers are expanded, you ſhould place a ſhort Stick down by each Root, to which, with a Wire formed into an Hoop, the Stem of the Flowers ſhould be faſtened, to ſupport them from falling; otherwiſe, when the Bells are fully expanded, their Weight will incline them to the Ground, eſpecially if they are permitted to receive a Shower of Rain.

During their Seaſon of flowering, they ſhould be covered in the Heat of the Day from the Sun, as alſo from all heavy Rains; but they ſhould be permitted to receive all gentle Showers, as alſo the morning and evening Sun: but if the Nights are froſty, they muſt be conſtantly defended therefrom. With this Management, you may continue your Hyacinths in Beauty at leaſt one whole Month, and ſometimes more, according to their Strength, or the Favourableneſs of the Seaſon.

When their Flowers are quite decayed, and the Tops of their Leaves begin to change their Colour, you muſt carefully raiſe the Roots out of the Ground with a narrow Spade, or ſome other handy Inſtrument: this is what the *Dutch* Gardeners term lifting of them: in the doing of this, the Inſtrument muſt be carefully thruſt down by the Side of the Root, being careful not to bruiſe or injure it, as alſo to put it below the Bottom of the Root: then by the forceing of this Inſtrument on one Side, the Fibres of the Root are raiſed and ſeparated from the Ground. The Deſign of this is, to prevent their receiving any more Nouriſhment from the Ground; for by imbibing too much Moiſture at this Seaſon, the Roots frequently rot after they are taken up: about a Fortnight after this Operation, the Roots ſhould be intirely taken out of the Ground; and then raiſe the Earth of your Beds into an high ſharp Ridge, laying the Roots into it in an horizontal Poſition, with their Leaves hanging out; by which means a great Part of the Moiſture contained in their thick ſucculent Stalks and Leaves will evaporate, which, if it were permitted to return back to the Roots, would cauſe them to rot and decay after they are taken up, which has been the general Defect of moſt of the Hyacinths in *England*.

In this Poſition the Roots ſhould remain until the green Leaves are intirely dried up, which perhaps may be in three Weeks time. This is what the *Dutch* Gardeners term, the ripening of their Roots; becauſe, by this Method, the Roots become firm, and the outer Cover is ſmooth, and of a bright purple Colour; whereas thoſe Roots which are permitted to remain undiſturbed, till the Leaves and Stalks are quite decayed, will be large, ſpongy, and their outer Coats will be of a pale Colour: for the Stems of many of theſe Flowers are very large, and contain a great Quantity of Moiſture; which, if ſuffered to return into the Roots, will infallibly cauſe many of them to periſh. After they are ſo ripened, you muſt take them out of the Ground, and wipe them clean with a ſoft woollen Cloth, taking off all the decayed Parts of the Leaves and Fibres, putting them into open Boxes where they may lie ſingly, and be expoſed to the Air: but they muſt be preſerved carefully from Moiſture; nor ſhould they be ſuffered to remain where the Sun may ſhine upon them: in this manner they may be preſerved out of the Ground until *September*, which is the Seaſon for planting them again; at which time you muſt ſeparate all the ſtrong flowering Roots, planting them in Beds by themſelves, that they may make an equal Appearance in their Flowers: but the Off-ſets and ſmaller Roots ſhould be planted in another ſeparate Bed for one Year; in which time they will acquire Strength, and by the ſucceeding Year will be as ſtrong as the older Roots.

The ſingle and ſemi double Flowers ſhould be planted alſo in a Bed by themſelves, where they ſhould be carefully ſheltered (as was directed before) from the Froſt, until the Flowers are blown; at which time their Covering ſhould be intirely removed, and they ſuffered to receive the open Air; which, tho' it may ſoon deface the Beauty of the Flowers, yet is abſolutely neceſſary to promote their ſeeding: and when the Seeds are quite ripe, you muſt cut off the Veſſels, and preſerve them, with the Seeds therein, until the Seaſon for ſowing it. But you muſt obſerve, that after theſe Flowers have produced Seeds, they ſeldom flower ſo well again, at leaſt not in two

Years after; ſo that the beſt Method to obtain good Seeds is, to plant new Roots every Year for that Purpoſe: altho' theſe Roots are, by moſt Perſons, taken up every Year, yet if the Beds are well prepared for them, they may remain two Years in the Ground unremoved; and the Roots will flower ſtronger the ſecond Year than the firſt: but thoſe Perſons who cultivate them for Sale, do every Year take up their Roots which are large and ſaleable; but the Off-ſets, and ſmall Roots, they uſually leave two Years in the Ground.

The common *Engliſh* Hyacinths are very hardy Plants, as are ſome of the ſingle blue and white *Oriental* Sorts, and increaſe very faſt by Off-ſets from the old Roots; ſo that it is hardly worth while to propagate them by Seeds, eſpecially ſince it can ſcarcely be expected to receive any great Varieties from them. Theſe Flowers, tho' common, are very pretty Ornaments in the Borders of the Flower-garden, where being intermixed with other bulbous-rooted Flowers, they add to the Variety, and continue the Succeſſion of Flowers a long time in the Spring; and as they are very hardy, and only require to be tranſplanted every other Year, they are worthy of room in every good Garden.

I ſhall in this Place mention two or three *Species* of Hyacinth, which have been lately introduced into the *Engliſh* Gardens from the *Cape of Good Hope*. Theſe have been figured by Dr. *Breynius* in his *Prodromus*: ſo I ſhall inſert them by the Names there given to them; tho', by their Characters, they might be ſeparated from this Genus.

1. HYACINTHUS *orchioides Africanus major bifolius, flore cæruleo majore. Breyn. prod.* II. *p.* 72. Greater two-leav'd *African* Hyacinth, ſhaped like the Orchis, with a large blue Flower.

2. HYACINTHUS *orchioides Africanus major bifolius maculatus, flore ſulphureo obſolete majore. Breyn. prod.* 2. *p.* 72. Greater *African* Hyacinth, with two ſpotted Leaves, and a large worn-out ſulphur-coloured Flower.

3. HYACINTHUS *orchioides aphyllus ſerpentarius major. C. B. P.* Greater ſerpent-like Hyacinth, without Leaves.

Theſe Plants are too tender to thrive in the open Air in *England*; ſo muſt be planted in Pots filled with light rich Earth: and in Winter they muſt be placed in a good Green-houſe, or in a Stove, which is kept in a very moderate Heat; if in the latter, the Plants will require to be oftener watered; becauſe the Heat will cauſe them to perſpire more, and the Earth in the Pots will dry faſter than thoſe placed in the Green-houſe.

The Leaves of theſe Plants appear about *Michaelmas*, and grow about ſeven or eight Inches high; and in *February* the Flowers appear, which grow without Pedicles, cloſe to the Stalk; this riſes about ſix Inches high. There is no great Beauty in theſe Flowers; but as they appear at a Seaſon, when there is a Scarcity of other Flowers, they may be allowed to have a Place. The Leaves and Flowers decay in *May*, and the Pots may then be placed abroad; but during the Summer, that the Roots are inactive, they ſhould have very little Water given them. The time for tranſplanting of theſe Roots is in *July*, before they begin to put out freſh Fibres.

The Seeds of the two firſt Sorts I received from Dr. *Job Baſter*, F. R. S. of *Zurikzee* in *Holland*; and in one Year the Roots produced Flowers,

ers, from the time of the Seeds being ſown.

HYACINTHUS PERUVIANUS. *Vide* Ornithogalum.

HYACINTHUS STELLATUS. *Vide* Ornithogalum.

HYACINTHUS TUBEROSUS. *Vide* Polyanthes.

HYDROCOTYLE, Water Navelwort.

This Plant grows in great Plenty in moiſt Places in moſt Parts of *England*, and is never cultivated for Uſe; ſo I ſhall paſs it over with only naming it.

HYDROLAPATHUM. *Vide* Lapathum.

HYDROPHYLLON, Water-leaf.

The *Characters* are;

It hath a bell-ſhap'd Flower conſiſting of one Leaf, and cut into ſeveral Segments: from the Bottom-part of the Flower ariſes the Pointal, which afterward becomes a Fruit opening in two Parts, incloſing Seeds of the ſame Shape as the Veſſel.

We have but one *Species* of this Plant: *viz.*

HYDROPHYLLON *Morini. Joncq. Hort.* Water-leaf of *Morinus.*

This Plant is very hardy in reſpect to Cold; but it ſhould be planted in a moiſt rich Soil; for if it is planted in a dry warm Soil, it will not live, unleſs it is conſtantly watered in dry Weather. It may be propagated by parting of the Roots, which ſhould be done in Autumn, that the Plants may be well rooted before Spring; for otherwiſe they will require a great deal of Water to preſerve them. The Roots ſhould not be parted too ſmall, nor ſhould it be done every Year, for that will weaken them too much: they will thrive very well in a ſhady Situation, provided it is not under the Drip of Trees. It flowers in *June*, but doth not perfect Seeds in this Country.

HYDROPIPER, *Vide* Perſicaria.

HYOSCYAMUS, Henbane.

The *Characters* are;

The Leaves are ſoft and hairy, growing alternately upon the Branches: the Cup of the Flower is ſhort, and bell-ſhaped, and divided into five Segments: the Flower conſiſts of one Leaf, the Bottom-part of which is tubuloſe, but is expanded at the Top, and divided into five Segments, having five obtuſe Stamina: *the Fruit, which is incloſed within the* Calyx, *reſembles a Pot with a Cover to it; and is divided, by an intermediate Partition, into two Cells, which contain many ſmall Seeds.*

The *Species* are;

1. HYOSCYAMUS *vulgaris, vel niger. C. B. P.* Common black Hen-bane.

2. HYOSCYAMUS *albus major, vel tertius Dioſcoridis, & quartus Plinii. C. B. P.* Greater white Henbane.

3. HYOSCYAMUS *major, albo ſimilis, umbilico floris atro purpureo. T. Cor.* Great Hen-bane like the White, but with a dark-purple Bottom to the Flower.

4. HYOSCYAMUS *minor, albo ſimilis, umbilico floris virenti. Jeſſieu.* Leſſer Hen-bane like the White, with a green Bottom to the Flower.

5. HYOSCYAMUS *rubello flore. C. B. P.* Hen-bane with a rediſh-colour'd Flower.

6. HYOSCYAMUS *Creticus luteus major. C. B. P.* Great yellow Henbane of *Candia.*

There are ſeveral other Varieties of this Plant, which are preſerv'd in Botanic Gardens, to add to their Numbers of Plants; but ſince they are rarely cultivated for Uſe, I ſhall forbear to ſay any thing of them in this Place.

The firſt of theſe Sorts is very common in *England*, growing upon the Sides of Banks and old Dunghils almoſt every-where. This is a very poiſonous Plant, and ſhould be rooted out in all Places where Children are ſuffer'd to come; for in the Year 1729. there were three Children poiſon'd with eating the Seeds of this Plant, near *Tottenham-Court*; two of which ſlept two Days and two Nights before they could be awakened; and were with Difficulty recovered; but the third, being older and ſtronger, eſcaped better.

The ſecond Sort is by moſt Authors ſuppoſed to be the true white Hen-bane of the Shops, the Seeds of which ſhould be uſed in Medicine; tho' there is very little Difference in the Seeds of that, and the third and fourth Sorts, either of which may probably do. The other Sorts are of no Uſe or Beauty: but whoever hath a mind to cultivate any of theſe Plants, may ſow their Seeds in the Spring upon a light dry undung'd Soil; and when the Plants are come up, they ſhould be tranſplanted out, allowing them two Feet Diſtance each Way. The ſecond Summer they will produce Flowers and Seeds, and ſoon after the Roots periſh.

The Seeds of theſe Plants, when ſown in the Spring, frequently lie in the Ground a whole Year before the Plants appear; but if they are ſown in the Autumn, ſoon after they are ripe, they ſeldom fail to come up, either ſoon after they are ſown, or the following Spring; ſo that I always prefer that Seaſon.

The ſixth Sort grows ſhrubby, and will abide ſeveral Years, provided the Plants are ſheltered in the Winter; for they will not live in the open Air at that Seaſon: but it only requires to be protected from Froſt; therefore if theſe Plants are placed under a common Hot-bed-frame in Winter, where they may enjoy as much free Air as poſſible in mild Weather, they will thrive better than when they are more tenderly treated. This Sort may be eaſily propagated by Cuttings, which, if planted in a ſhady Border, during any of the Summer-months, will take Root in a Month or ſix Weeks; and may be afterward planted in Pots, and treated like the old Plants.

This Sort will frequently ripen Seeds; but if theſe are not ſown in the Autumn, they rarely grow.

HYPECOON. We have no *Engliſh* Name for this Plant.

The *Characters* are;

The Flower conſiſts of four Leaves, which are placed in form of a Croſs; theſe are uſually divided into three Parts: out of the Flower-cup riſes the Pointal, which afterward becomes a plain ſmooth jointed Pod, full of kidney-ſhaped Seeds, which are incloſed in each Joint.

The *Species* are;

1. HYPECOON *latiore folio. Tourn.* Broad-leav'd Hypecoon.

2. HYPECOON *tenuiore folio. Tourn.* Narrow-leav'd Hypecoon.

3. HYPECOON *Orientale, latiore folio, flore magno. Tourn. Cor. Eaſtern* Hypecoon, with a broader Leaf, and a large Flower.

4. HYPECOON *Orientale, fumariæ folio. Tourn. Cor. Eaſtern* Hypecoon, with a Fumitary-leaf.

The firſt and ſecond Sorts grow plentifully in the South of *France*, in *Spain*, and *Italy*; but the third and fourth Sorts were diſcovered by Dr. *Tournefort* in the *Levant*; from whence he ſent their Seeds to the Royal Garden at *Paris*.

Theſe Plants are all of them annual; ſo their Seeds ſhould be ſown the Beginning of *March*, on a Bed of freſh light Earth, where they are to remain; for they ſeldom ſucceed, if they are tranſplanted. When the Plants are come up, they ſhould be carefully cleared from Weeds; and where the Plants are too cloſe, they muſt be thinned, leaving them about ſix or eight Inches apart; after this they will require no other Culture, but to keep them conſtantly clear from Weeds. In *June* theſe Plants will flower, and their Seeds will be ripe in *Auguſt*.

Sometimes, when the Spring proves very dry, the Seeds will not grow the firſt Year; but if the Ground is kept clear from Weeds, and not diſturbed, the Plants will come up the following Spring. I have known the Seeds of theſe Plants remain in the Ground two Years, and the Plants have come up the third Spring very well; ſo that it may be very proper to ſow ſome of their Seeds in Autumn, ſoon after they are ripe, in a warm Border, where the Plants may come up early the following Spring; and theſe will be ſtronger, and more likely to perfect Seeds, than thoſe ſown in the Spring; by which Method the Kinds may be preſerved.

Theſe Plants are ſeldom propagated but by thoſe who are curious in Botany, tho', for the ſake of Variety, they may have a Place in large Gardens, becauſe they require very little Trouble to cultivate them; and as they take up but little room, ſo they may be intermixed with other ſmall annual Plants in large Borders, where they will make a pretty Appearance.

The Juice of theſe Plants is of a yellow Colour, reſembling that of Celandine; and is affirmed by ſome eminent Phyſicians to have the ſame Effect as *Opium*.

HYPERICUM, St. John's-wort.

The *Characters* are;

It hath a fibroſe Root: the Leaves grow oppoſite by Pairs at the Joints of the Stalks: the Flower-cup conſiſts of one Leaf, which is divided into five Parts, and expanded: the Flower, which conſiſts of five Leaves, expands in form of a Roſe, having many Stamina *in the Centre, ſurrounding a conical Ovary, which becomes a three-cornered pointed Fruit, and is divided into three Cells containing many ſmall Seeds.*

The *Species* are;

1. HYPERICUM *vulgare. C. B. P.* Common St. John's-wort.

2. HYPERICUM *Aſcyron dictum, caule quadrangulo. J. B.* St. John's-wort, with a ſquare Stalk, commonly call'd St. Peter's-wort.

3. HYPERICUM *fœtidum fruteſcens. Tourn.* Stinking ſhrubby St. John's-wort.

4. HYPERICUM *fruteſcens Canarienſe multiflorum. Hort. Amſt.* Shrubby St John's-wort from the *Canaries*, with many Flowers.

5. HYPERICUM *Orientale, flore magno. T. Cor. Eaſtern* St. John's-wort, with a large Flower.

6. HYPERICUM *villoſum erectum, caule rotundo. Tourn.* Upright hairy St. John's-wort, with a round Stalk.

7. HYPERICUM *elegantiſſimum non ramoſum, folio lato. J. B.* The moſt beautiful St. John's-wort without Branches, and a broad Leaf.

8. HYPERICUM *minus erectum. C. B. P.* Small upright St. John's-wort.

9. HYPERICUM *minus ſupinum, vel ſupinum glabrum. C B. P.* Small ſmooth trailing St. John's-wort.

10. HYPERICUM *folio breviore. C. B. P.* Short-leav'd St. John's-wort.

11. HYPERICUM *criſpum, triquetro & cuſpidato folio. Bocc. Muſ.* Curl-

ed St. John's-wort, with a three-corner'd and pointed Leaf.

12. HYPERICUM *perfoliatum & perforatum. Tourn.* Perfoliated and perforated St. John's-wort.

13 HYPERICUM *amplo perfoliato folio. Tourn.* St. John's-wort with a large Thorough-wax-leaf.

14. HYPERICUM *Alpinum humilius, magno flore punctato. Tourn.* Dwarf St John's-wort of the *Alps*, with a large ſpotted Flower.

15. HYPERICUM *latifolium Luſitanicum. Tourn.* Broad-leav'd *Portugueſe* St John's-wort.

16. HYPERICUM *Luſitanicum, linariæ folio. Tourn* *Portugueſe* St. John's-wort, with a Toad flax-leaf

17 HYPERICUM *tomentoſum Luſitanicum minimum. Tourn.* The ſmalleſt woolly *Portugueſe* St. John's-wort.

18. HYPERICUM *Creticum ſupinum, folio ſubrotundo, flore magno. Tourn. Cor* *Candy* trailing St. John's-wort, with a roundiſh Leaf, and a large Flower.

19 HYPERICUM *Creticum, ampliſſimo folio lucido. Tourn. Cor* *Candy* St. John's wort, with a large ſhining Leaf

20. HYPERICUM *villoſum, foliis caulem ambientibus acutis, cæteris vero circinatis. Tourn. Cor.* Hairy St. John's-wort, with pointed Leaves encompaſſing the Stalk, and the Bottom-leaves exactly round.

21. HYPERICUM *Orientale, foliis ſubrotundis auritis, cauli adhærentibus Tourn. Cor.* *Eaſtern* St John's-wort, with roundiſh-ear'd Leaves adhering to the Stalk.

22 HYPERICUM *Orientale, ptarmicæ foliis. Tourn. Cor.* *Eaſtern* St. John's wort, with Sneezwort-leaves.

23 HYPERICUM *Orientale, fœtido ſimile, ſed inodorum. Tourn. Cor.* *Eaſtern* St John's-wort, like the ſtinking Kind, but without Smell.

24. HYPERICUM *Orientale ſaxatile, majoranæ folio. Tourn. Cor.* *Eaſtern* Rock St. John's-wort, with a Marjoram-leaf.

25. HYPERICUM *Orientale, androſæmo hirſuto ſimile, ſed glabrum. Tourn. Cor.* *Eaſtern* St. John's-wort, reſembling hairy Tutſan, but ſmooth.

26. HYPERICUM *Orientale, polygoni folio Tourn Cor.* *Eaſtern* St. John's-wort, with a Knot graſs leaf.

27. HYPERICUM *Orientale, caule aſpero purpureo. Tourn Cor.* *Eaſtern* St. John's-wort, with a rough purple Stalk.

28. HYPERICUM *Orientale, caule aſpero purpureo, linariæ folio. Tourn. Cor.* *Eaſtern* St. John's-wort, with a rough purple Stalk, and a Toad-flax-leaf.

29. HYPERICUM *Orientale, roriſmarini folio glauco. Tourn. Cor.* *Eaſtern* St. John's-wort, with a ſea-green Roſmary-leaf.

30. HYPERICUM *Orientale latifolium ſubhirſutum, caule purpureo villoſo Tourn Cor.* Broad leav'd *Eaſtern* St. John's-wort, ſomewhat hairy, with a purple hairy Stalk.

The firſt and ſecond Sorts are both very common Plants, growing in the Fields in moſt Parts of *England*: the firſt is uſed in Medicine, but the ſecond is of no Uſe: theſe are rarely propagated in Gardens; but I chooſe to mention them, in order to introduce ſome other Sorts, which deſerve a Place in every good Garden.

The third and fourth Sorts are ſhrubby Plants, which are very proper to intermix with other flowering Shrubs of the ſame Growths; where, by their long Continuance in Flower, they will make a very handſome Appearance. The third Sort is of an humble Stature, ſeldom riſing above four Feet in Height; but the fourth will grow to the Height of ſeven or eight Feet.

Theſe two Sorts are propagated by Suckers, which are plentifully ſent forth from the old Plants. The beſt Seaſon for taking off theſe Suckers is either in Autumn, or in *March*, juſt before they begin to ſhoot: they ſhould be planted in a light dry Soil, in which they will endure the ſevereſt Cold of our Climate very well. They may alſo be propagated by Cuttings, which ſhould be planted at the ſame Seaſon; or by Seeds, which muſt be ſown in *Auguſt* or *September*, which is as ſoon as they are ripe; for if they are kept till Spring, few of them will grow: but as they multiply ſo faſt by Suckers, the other Methods of propagating them are ſeldom practiſed in *England*.

The only Care theſe Shrubs require, is, to clear them from Suckers every Spring, and to cut out all decayed and luxuriant Branches, in order to reduce them to a regular Figure. They produce their Flowers in *July*, and continue flowering until the End of *September*, which renders them very agreeable; but their Leaves, when bruiſed, emit a very rank Odour.

The fifth Sort is alſo an abiding Plant; but it ſeldom riſes above eighteen Inches, or two Feet high. This is propagated by parting the Roots, and planting Cuttings in the Spring: it is ſomewhat tenderer than the laſt, but will endure the Cold of our ordinary Winters in the open Air, provided it be not too much expoſed to the cold Winds. It may alſo be propagated by ſowing the Seeds in *March*, upon a Bed of light Earth, in an open Situation; and when the Plants are large enough to be tranſplanted, they may be placed in the warm Borders of the Pleaſure-garden; and the Summer following they will produce their Flowers in large Quantities upon the Tops of the Branches; which, being of a large Size, and a bright yellow Colour, make a very handſome Shew.

The ſixth, ſeventh, eighth, and ninth Sorts are Natives of *England*, growing in Woods, and other ſhady Places, in divers Parts. The tenth, eleventh, twelfth, and thirteenth Sorts grow in the South of *France*, in *Italy*, and *Spain*; yet are hardy enough to endure the Cold of our ordinary Winters very well in the open Air. The fourteenth Sort grows on the *Alps*. The fifteenth, ſixteenth, and ſeventeenth Sorts are Natives of *Portugal*: but all the following Sorts were diſcovered by Dr. *Tournefort*, in the *Levant*.

All theſe Plants may be propagated by ſowing their Seeds, ſoon after they are ripe, on a Bed of freſh undung'd Earth; and when the Plants are come up, they ſhould be kept clear from Weeds: the following Spring they may be tranſplanted to the Places where they are to remain; after the Plants have taken new Root, they will require no farther Care, but to keep them clear from large Weeds; which, if ſuffered to grow amongſt them, will overbear and deſtroy them.

Moſt of the Kinds, being Natives of Woods, and ſhady Places, will grow very well under the Drip of Trees; ſo that they may be planted in large Wilderneſs-quarters, where they will thrive, and make a pretty Variety. But it will be proper to keep a few Plants of each Kind in a ſhady Border; where, if they are permitted to ſhed their Seeds, they will produce a Supply of young Plants, whereby the Kinds may be preſerved: for as ſome of the Kinds do not continue above two or three Years, ſo, where there is not Care taken to have a conſtant Supply of young Plants, their Kinds will be loſt; for where the Shade of the Wilderneſs is very thick, the Seeds which fall there will not ſucceed; becauſe the Leaves of the Trees, falling in Autumn, when the Seeds are ripe, cover the Ground; whereby the Seeds either do not reach the Earth, or, if they do, they are ſo cloſely covered by the falling Leaves, that they cannot enjoy the Benefits of the Air; ſo that they rarely grow.

HYPERICUM FRUTEX. *Vide* Spiræa.

HYPOCISTIS.

We have no *Engliſh* Name for this Plant.

The *Characters* are;

It hath a bell-ſhaped Flower conſiſting of one Leaf, which is cut into ſeveral Segments at the Brim: the hinder Part of the Flower becomes a ſoft Fruit, divided into Rays, in which are contained the Seeds.

The *Species* are;

1. Hypociſtis *Cretica, flore purpureo. Tourn. Cor. Candy* Hypociſtis, with a purple Flower.

2. Hypociſtis *purpurea, flore candicante. Tourn. Cor.* Purple Hypociſtis, with a white Flower.

3. Hypociſtis *flore luteo. Tourn. Cor.* Hypociſtis with a yellow Flower.

4. Hypociſtis *palleſcentis coloris, lineis purpuraſcentibus & nonnihil viriſcentibus diſtincta. Cluſ. Hiſt.* Pale-coloured Hypociſtis, with purpliſh Lines.

Theſe Plants grow from the Root of the *Ciſtus*, or Rock-roſe; ſo cannot be cultivated by Art; it being a Superplant, like the Miſleto; and it is not known to grow on any other Plant but the *Ciſtus*. But as one of the Species is uſed in Medicine, I thought it proper to mention the ſeveral Kinds which have been diſcovered.

HYSSOPUS, Hyſſop.

The *Characters* are;

It is a veritcillate Plant, with long narrow Leaves: the Galea *(or Creſt) of the Flower is roundiſh, erect, and divided into two Parts: the* Barba *(or Beard) is divided into three Parts: the middle Part is hollowed like a Spoon, having a double Point, and is ſomewhat winged: the Whorles of the Flowers are ſhort, and at the Lower-part of the Stalk are placed at a great Diſtance, but toward the Top are cloſer join'd, ſo as to form a regular Spike.*

The *Species* are;

1. Hyssopus *officinarum cærulea, ſeu ſpicata. C. B. P.* Common Hyſſop of the Shops, with blue Flowers growing in a Spike.

2. Hyssopus *vulgaris alba. C. B. P.* Common Hyſſop, with a white Flower.

3. Hyssopus *rubro flore. C. B. P.* Hyſſop with a red Flower.

4. Hyssopus *montana Macedonica, Valerandi Dourez. J. B.* Mountain *Macedonian* Hyſſop.

5. Hyssopus *humilior myrtifolia. H. R. Par.* Dwarf myrtle-leav'd Hyſſop.

6. Hyssopus *utrinque florida. Dod. pempt.* Hyſſop bearing Flowers on every Side.

7. Hyssopus *vulgaris, moſchum redolens. C. B. P.* Common Hyſſop, ſmelling like Muſk.

8. Hyssopus *criſpa. Geſner. Hort.* Curled Hyſſop.

9. Hyssopus *foliis diſſectis. C. B. P.* Hyſſop with cut Leaves.

10. Hyssopus *ſpica brevi & rotunda. C. B. P.* Hyſſop with a ſhort and round Spike.

11. Hyssopus *verſicolor ſive aureus. Park. Par.* Gold-ſtriped Hyſſop.

12. **Hyssopus** *hirſuta. C. B. P.* Hairy Hyſſop.

13. **Hyssopus** *hirſuta, flore albo. Tourn.* Hairy Hyſſop, with a white Flower.

All the Sorts of Hyſſop are propagated either by Seeds or Cuttings: if by the Seeds, they muſt be ſown in *March*, upon a Bed of light ſandy Soil; and when the Plants come up, they ſhould be tranſplanted out to the Places where they are to remain, placing them at leaſt a Foot aſunder each Way: but if they are deſigned to abide in thoſe Places for a long time, two Feet Diſtance will be ſmall enough; for they grow pretty large, eſpecially if they are not frequently cut, to keep them within Compaſs. They thrive beſt upon a poor dry Soil, in which Situation they will endure the Cold of our Climate better than when they are planted on a richer Soil. If you would propagate them by Cuttings, they ſhould be planted in *April* or *May*, in a Border where they may be defended from the violent Heat of the Sun; and being frequently watered, they will take Root in about two Months; after which, they may be tranſplanted where they are to continue, managing them as was before directed for the Seedling-plants.

The firſt Sort was formerly more cultivated than at preſent in *England*, that being the Sort commonly uſed in Medicine. The other Species are preſerved in curious Gardens for their Variety; but they are ſeldom cultivated for Uſe.

All theſe Sorts of Hyſſop are very hardy Plants, which will endure the Cold of our Winters in the open Air, provided they are planted in a dry undunged Soil; for when they are planted in a rich Soil, they grow very luxuriant in Summer, and are leſs able to reſiſt the Cold in Winter; ſo that when any of theſe Plants grow out of the Joints of old Walls (as they frequently do), they will reſiſt the moſt ſevere Froſt; and will be much more aromatic, than thoſe which grow in a rich Soil.

It hath been a great Diſpute amongſt modern Writers, whether the Hyſſop now commonly known is the ſame which is mention'd in Scripture: about which there is great room to doubt, there being very little Grounds to aſcertain that Plant: tho' it is moſt generally thought to be the Winter-ſavory, which Plant is now in great Requeſt amongſt the Inhabitants of the *Eaſtern* Countries, for outward Waſhings or Purifications.

* * *

J A

Jacea, Knapweed.

The *Characters* are;

It is one of the Herbæ capitatæ, *or headed Plants the* Calyx, *or Cup, is ſquamoſe: the Borders of the Leaves are commonly equal, being neither ſerrated nor indented: the Florets round the Border of the Head are barren; but thoſe placed in the Centre are ſucceeded each by one Seed, having a Down adhering to it.*

The *Species* are;

1. **Jacea** *nigra pratenſis latifolia. C. B. P.* Broad-leav'd meadow black Knapweed.

2. **Jacea** *cum ſquamis pennatis, ſive capite villoſo. J. B.* Woolly-headed Knapweed.

3. **Jacea** *montana candidiſſima, ſtœbes foliis. C. B. P.* Mountain Knapweed, with very white Leaves.

4. JACEA *Luſitanica ſempervirens. H. R. Par.* *Portugal* ever-green Knapweed.

5. JACEA *Epidaurica, candidiſſima & tomentoſa, Tourn.* White woolly Knapweed of *Raguſa.*

6. JACEA *cyanoides, echinato capite. C. B. P.* Prickly-headed Knapweed.

7. JACEA *cum ſquamis cilii inſtar piloſis. J. B.* Knapweed with hairy Scales.

8. JACEA *nigra, ſquamoſo capite, major. C. B. P.* Greater black Knapweed, with a ſcaly Head.

9. JACEA *nigra, ſquamoſo capite, minor. C. B. P.* Smaller black Knapweed, with a ſcaly Head.

10. JACEA *vulgaris laciniata, flore purpureo. Tourn.* Great Knapweed, or Matfellon.

11. JACEA *vulgaris laciniata, flore albo. Tourn.* Great Knapweed, or Matfellon, with a white Flower.

12. JACEA *latiſſimo laciniato folio. C. B. P.* Knapweed with a broad jagged Leaf.

13. JACEA *cinerea laciniata, flore purpureo. Triumf.* Jagged aſh-coloured Knapweed, with a purple Flower.

14. JACEA *foliis cichoraceis villoſis, altiſſima, flore purpureo. Tourn.* The talleſt Knapweed, with hairy Succory-leaves, and a purple Flower.

15. JACEA *foliis cichoraceis villoſis, altiſſima, flore albo. Tourn.* The talleſt Knapweed, with hairy Succory-leaves, and a white Flower.

16. JACEA *foliis erucæ lanuginoſis. Tourn.* Knapweed with woolly Rocket-leaves.

17. JACEA *foliis candicantibus laciniatis, calyculis non ſplendentibus. Tourn.* Knapweed with whitiſh jagged Leaves, and an Empalement not ſhining.

18. JACEA *foliis laciniatis viridibus, calyculis argenteis. Tourn.* Knapweed with green jagged Leaves, and ſilver Empalements.

19. JACEA *calyculis argenteis, minor. Tourn.* Leſſer Knapweed, with ſilver Empalements.

20. JACEA *Alpina, ſuccisæ folio. Tourn.* Mountain Knapweed, with a Devils-bit-leaf.

21. JACEA *folio cerinthes, e Rupe Victoriæ. Tourn.* Knapweed with an Honeywort-leaf.

22. JACEA *Hiſpanica latifolia, nervis foliorum lanuginoſis. Bocc. Muſ.* Broad-leav'd *Spaniſh* Knapweed, with the Nerves of the Leaves woolly.

23. JACEA *Cretica aculeata incana. Tourn.* Hoary prickly Knapweed of *Crete.*

24. JACEA *tomentoſa, foliis undulatis. Tourn.* Woolly Knapweed, with waved Leaves.

25. JACEA *Cretica ſaxatilis, glaſti folio. Tourn. Cor.* Rock Knapweed of *Candy*, with a Woad-leaf.

26. JACEA *Cretica laciniata argentea, parvo flore flaveſcente. Tourn. Cor.* Silver-jagged *Candy* Knapweed, with a ſmall yellowiſh Flower.

27. JACEA *Cretica acaulos, cichorii folio. Tourn. Cor.* *Candy* Knapweed, without a Stalk, and a Succory-leaf.

28. JACEA *Orientalis acaulos, cichorii folio, flore citrino. Tourn. Cor.* *Eaſtern* Knapweed, without a Stalk, and a citron-colour'd Flower.

29. JACEA *Orientalis patula, carthami facie, flore luteo magno. Tourn. Cor.* Spreading *Eaſtern* Knapweed, with the Face of Baſtard-ſaffron, and a large yellow Flower.

30. JACEA *Orientalis, conyzæ folio, flore magno. Tourn. Cor.* *Eaſtern* Knapweed, with a Fleabane-leaf, and a large Flower.

31. JACEA *Orientalis, cyani folio, flore parvo, calyce argenteo. Tourn. Cor.* *Eaſtern* Knapweed, with a

Blue-bottle-leaf, and a ſmall Flower with a ſilver Empalement.

32. JACEA *Orientalis, folio ſinuato ſubtus tomentoſo, flore purpureo. Tourn. Cor. Eaſtern* Knapweed, with a ſinuated Leaf, hoary underneath, and a purple Flower.

33. JACEA *Orientalis maritima incana, coronopi folio. Tourn. Cor. Eaſtern* maritime hoary Knapweed, with a Bucks horn-leaf.

34. JACEA *Orientalis perennis, lato coronopi folio, flore purpuraſcente. Tourn. Cor.* Perennial *Eaſtern* Knapweed, with a broad Bucks-horn-leaf, and a purpliſh Flower.

35. JACEA *Orientalis perennis, anguſtiſſimo & incano coronopi folio, flore purpuraſcente. Tourn. Cor.* Perennial *Eaſtern* Knapweed, with a very narrow and hoary Bucks-horn-leaf, and a purpliſh Flower.

36. JACEA *Orientalis laciniata incana & moſchata. Tourn. Cor.* Hoary muſk jagged-leav'd *Eaſtern* Knapweed.

37. JACEA *lutea ſpinoſa centaurioides. C. B. P.* Prickly yellow Knapweed, like the greater Centaury.

38. JACEA *latifolia purpurea, capitulo ſpinoſo. C. B. P.* Broad-leav'd purple Knapweed, with a prickly Head.

39. JACEA *ſpinoſa Cretica, an ſpecies hyoſiridis Plinii. Zan.* Prickly Knapweed of *Candy*, ſuppoſed to be a Species of *Hyoſiris* of *Pliny*.

40. JACEA *marina Bætica. Park. Theat.* Sea *Spaniſh* Knapweed.

41. JACEA *cyanoides altera, caule alato. Par. Bat.* Another Knapweed like Blue-bottle, with a winged Stalk.

42. JACEA *Melitenſis, capitulis conglobatis. Bocc. Rar. Plant.* Knapweed of *Malta*, with conglobated Heads.

43. JACEA *Orientalis annua, coronopi folio, flore luteo. Tourn. Cor.* Annual *Eaſtern* Knapweed, with a Bucks-horn-leaf, and a yellow Flower.

44. JACEA *arboreſcens, ſtyracis folio. Tourn.* Tree Knapweed, with a Storax-tree-leaf.

45. JACEA *Cretica fruteſcens, elichryſi folio, flore magno purpuraſcente. Tourn. Cor.* Shrubby Knapweed of *Candy*, with a Goldylock-leaf, and a large purpliſh Flower.

46. JACEA *fruteſcens, plantaginis folio, flore albo. Tourn. Cor.* Shrubby Knapweed, with a Plantain-leaf, and a white Flower.

The firſt, ſecond, ſeventh, eighth, ninth, tenth, eleventh, and twelfth Sorts are Plants of no great Beauty or Uſe: ſome of theſe grow wild by the Side of Foot paths almoſt in every Part of *England*, and become very troubleſome Weeds in the Fields: others of them grow upon arable Land amongſt Corn, and are no leſs troubleſome Weeds: but the firſt Sort is ſo common in many of the Paſtures, as to occupy moſt Part of the Land, to the great Prejudice of the Graſs; therefore, by all good Huſbandmen, ſhould be rooted out. The only Way to deſtroy this Plant in the Paſtures is twice every Year; *viz.* Spring and Autumn, to cut up all the Roots with a Spaddle; for as theſe are perennial Plants, ſo, unleſs their Roots are cut up below the Buds, they will grow again, were their Tops cut off every Month: but if the Meadows are kept clear of theſe Plants, for two or three Years, in which time it may be ſuppoſed, that all, or the greateſt Part, of the Seeds, which may have been ſcattered, has grown, a very little Trouble afterward will keep the Fields clean. The ſame Method ſhould alſo be taken with theſe Plants, when they grow by the Sides of Foot-paths, or under Hedges; becauſe, if theſe are not rooted out, their Seeds, having Wings to them, will be wafted by the Wind over the whole Field; ſo that the Labour of weeding the Fields will be loſt, where the Hedges are full of bad Weeds.

The third, fifth, thirteenth, twenty-fourth, twenty-fifth, forty-fourth, and forty-fifth Sorts are abiding Plants, which are frequently preſerved in Gardens for their Beauty. The third and fifth have very white ſilver Leaves, which make a fine Appearance thro' the Year; but theſe are too tender to live in the open Air in *England* thro' the Winter; ſo that the Plants ſhould be planted in Pots filled with light loamy Earth; and if they are ſheltered under an Hot-bed-frame in Winter, giving them as much Air as poſſible in mild Weather, they will do better than when they are treated more tenderly; and ſome of the Plants may be turned out of the Pots in the Spring, and planted in warm Borders, where they will flower better than thoſe which are kept in Pots, and will more certainly produce Seeds: but it will be adviſeable to keep ſome Plants of each Sort in Pots, leſt thoſe which are planted abroad ſhould be deſtroyed, whereby the Sorts may be loſt.

The ſixteenth, ſeventeenth, eighteenth, nineteenth, twentieth, twenty-firſt, and twenty-ſecond Sorts are alſo perennial Plants. Theſe grow wild in ſeveral Parts of *Europe*; but are not Natives of *England*.

All theſe Sorts may be propagated by Seeds, which ſhould be ſown in *March*, on a Bed of freſh undunged Earth: when the Plants begin to appear, they muſt be carefully cleared from Weeds; and as ſoon as they are fit to tranſplant, they ſhould be removed, and planted in Beds of undunged Earth, at about a Foot Diſtance every Way. Theſe Plants muſt be watered, and if the Seaſon is hot, they ſhould be ſhaded until they have taken new Root; after which time they will require no farther Care but to keep them clear from Weeds until *Michaelmas* following, when they ſhould be taken up and tranſplanted where they are deſigned to remain; the common hardy Sorts under Trees, in Wilderneſs-quarters, and other abject Parts of the Garden, where they will abide many Years, and only require to be kept clear from the largeſt Weeds, which will overbear them; but as for leſſer Weeds, they will not hurt them: the other Sorts, which are more tender, ſhould be planted in a warmer Situation, and on a lean ſtony Soil, where they will endure the Cold of our Winters very well, and afford an agreeable Variety.

The ſixth, fourteenth, fifteenth, thirty-ſeventh, forty-firſt, forty-ſecond, and forty-third Sorts are annual Plants. The Seeds of theſe muſt be ſown either in *March*, or the Beginning of *September*. Thoſe which are ſown in Autumn will come up, and the Plants will be ſtrong enough to reſiſt the Froſt, provided they are in a warm Border; and theſe Plants will flower much ſtronger, and come earlier in the Seaſon, than thoſe ſown in the Spring; ſo that theſe will always produce good Seeds. But if theſe autumnal Plants ſhould be deſtroyed by ſevere Froſt, then ſome of their Seeds ſhould be ſown in *March*, on a Bed of Earth, where they are deſigned to remain: for theſe Plants will not be large enough to tranſplant till *May*, when the Seaſon is generally warm; ſo that it will be difficult to make the Plants take Root, unleſs they are conſtantly ſhaded and watered: it is a better Method therefore to ſow theſe Seeds in the Spring on the Borders where they are to remain; and then all the Care required will be, to clear them from Weeds, and thin the Plants where they come up too cloſe: but thoſe Plants which come up in Autumn, may be tranſplanted out the Beginning of *March*; at which time they will ſoon take Root, and then will require no farther Culture but to keep them clear from Weeds. Theſe Plants continue a long time in Flower, eſpecially the ſixth Sort; which renders them worthy of a Place in every large Garden.

The twenty-fifth, forty-fourth, forty-fifth, and forty-ſixth Sorts are ſhrubby Plants, which riſe to the Height of four or five Feet, and their Stems become woody. Theſe are Natives of the *Archipelago*, from whence their Seeds have been ſent to ſeveral curious Botanic Gardens; but at preſent they are very rare in *England*. They may be propagated by ſowing of their Seeds in *March*, on a warm Border of freſh Earth; and when the Plants are come up, they muſt be carefully weeded, and when they have acquired Strength enough, they ſhould be carefully taken up, and each tranſplanted into a ſeparate ſmall Pot filled with freſh light Earth, and placed in the Shade until they have taken new Root; when they may be returned into an open Situation, where they may remain till *October* following: after this they ſhould be treated in the ſame manner, as hath been directed for the third, fifth, *&c.* as may all the *Eaſtern* Kinds.

The following Spring a few Plants of each Kind may be ſhaken out of the Pots, and planted in warm dry Borders, where they will live thro' the Winter, provided the Froſt is not very ſevere; and theſe Plants will flower much ſtronger than thoſe in Pots; but it will be proper to keep two Plants of each Kind in Pots to be ſheltered in Winter, for fear thoſe abroad ſhould be deſtroyed, that the Kinds may be preſerved.

Theſe Plants ſeldom produce good Seeds in this Country; ſo that when the Plants are obtained, they may be propagated by Cuttings, which ſhould be planted about the Middle of *June* on a ſhady Border; where, if they are duly watered, they will take Root in about two Months; but it will be proper to let them remain in the ſame Border until the Beginning of *September*, when they ſhould be carefully taken up, and planted into Pots, and placed in the Shade until they are rooted: then they may be expoſed in an open Situation till the Middle or Latter-end of *October*, when they ſhould be removed into Shelter, and managed as hath been directed for thoſe Plants which are raiſed from Seeds. In Summer theſe Plants will flower, when they will afford an agreeable Proſpect, if they are placed among other hardy Exotic Plants; and as they are ever-green, they add to the Variety in Winter.

JACOBÆA, Ragwort.

The *Characters* are;

It hath a radiated Flower, the Tube of which is almoſt of a cylindrical Figure, and the Seeds are faſtened to Down: to which may be added, The Leaves are deeply laciniated, or jagged.

The *Species* are;

1. JACOBÆA *vulgaris laciniata. C. B. P.* Common Ragwort.

2. JACOBÆA *latifolia paluſtris, ſive aquatica. Raii Hiſt.* Broad-leav'd Marſh Ragwort.

3. JACOBÆA *Alpina, foliis ſubrotundis ſerratis. C. B. P.* Roundiſh ſawed-leav'd Ragwort of the *Alps*.

4. JACOBÆA *Alpina, foliis longioribus ſerratis. Tourn.* Ragwort of the *Alps*, with long ſawed Leaves.

5. Jacobæa *montana, betonicæ folio. Barr. Icon.* Mountain Ragwort, with a Betony-leaf.

6. Jacobæa *chryſanthemi Cretici folio glauco. Tourn.* Ragwort with a ſea-green Chryſanthemum-leaf.

7. Jacobæa *ſenecionis folio incano, perennis. Raii Hiſt.* Perennial hoary Ragwort, with a Groundſel-leaf.

8. Jacobæa *Pannonica prima. Cluſ. Hiſt.* Mountain Ragwort, with an undivided Leaf.

9. Jacobæa *foliis amplioribus incanis. Mor. H. R. Bleſ.* Ragwort with large hoary Leaves.

10. Jacobæa *maritima, ſive Cineraria latifolia. C. B. P.* Broad-leav'd Sea Ragwort.

11. Jacobæa *foliis ferulaceis, flore minore. Tourn.* Ragwort with Fenel-giant-leaves, and a ſmaller Flower.

12. Jacoaæa *foliis ferulaceis, flore majore. Tourn.* Ragwort with Fenel-giant-leaves, and a larger Flower.

13. Jacobæa *Africana, botryos folio. Boerh. Ind. alt. African* Ragwort, with an Oak-of-*Jeruſalem*-leaf.

14. Jacobæa *Chia, ſenecionis folio villoſo, flore magno. Tourn. Cor.* Ragwort of *Chio*, with an hoary Groundſel-leaf, and a large Flower.

15. Jacobæa *Orientalis, ſenecionis folio tenuiſſime diviſo, non incano, flore magno. Tourn. Cor. Eaſtern* Ragwort, with a very narrow-divided Groundſel-leaf, not hoary, and a large Flower.

16. Jacobæa *Græca maritima, foliis ſuperne virentibus, inferne incanis. Tourn. Cor. Greek* Sea Ragwort, with Leaves green on their upper Side, but hoary underneath.

17. Jacobæa *Africana fruteſcens, abrotani folio. Old.* Shrubby *African* Ragwort, with a Southern-wood-leaf.

18. Jacobæa *Africana, abſinthii foliis. Oldenl. African* Ragwort, with Wormwood-leaves.

19. Jacobæa *Americana odorata & viſcoſa, florum radiis breviſſimis albis. Houſt.* Sweet-ſmelling viſcous *American* Ragwort, with very ſhort white Rays to the Flower.

20 Jacobæa *maritima. C. B. P.* Sea Ragwort.

21. Jacobæa *Africana fruteſcens, flore amplo purpureo, elegantiſſimo ſenecionis folio. Volk.* Shrubby *African* Ragwort, with an ample Flower, and Leaves like Groundſel.

22. Jacobæa *Africana fruteſcens, foliis inciſis, & ſubtus cineraceis. Com. Rar. African* ſhrubby Ragwort, with cut Leaves, and the Under-part of an Aſh colonr.

The firſt Sort of Ragwort here mentioned is one of the moſt troubleſome Weeds, on poor wet Paſture-lands, and on Commons, in almoſt every Part of *England*; but is never admitted into Gardens, becauſe where the Seeds are permitted to ſcatter, the Down which adheres to them will carry them to a great Diſtance; ſo that all the Ground will be filled with the Weeds. The only Method to deſtroy this Plant in Paſtures is, to go over the Land in *April*, when the Weather is dry, and with a Spaddle cut up the Plants by their Roots; and, if the Weather continues dry, they will ſoon decay. This Work ſhould alſo be repeated in *Auguſt*, to cut up ſuch Plants as may have come up ſince *April*; and if this be repeated two or three Years, never ſuffering any of the Plants to ſtand to flower, it will effectually deſtroy them.

The ſecond Sort is alſo a very common Weed on low marſhy Lands, where the Water uſually ſtands in Winter. This is alſo very troubleſome on many Commons, and other Paſtures; but may be deſtroyed in the ſame manner as the former.

The third, fourth, and fifth Sorts are Natives of the *Alps*, and *Pyrenean* Mountains, from whence they have been procured, and are preſerved in ſeveral curious Botanic Gardens for the ſake of Variety. They may be propagated by Seeds, which ſhould be ſown in the Spring, on a Bed of freſh Earth; and when the Plants are come up, they ſhould be carefully weeded; and when they are ſtrong enough to be removed, they ſhould be tranſplanted into a ſtrong loamy Soil, where they will continue many Years, and require no other Culture but to clear them from Weeds.

The ſixth, eighth, thirteenth, fourteenth, and fifteenth Sorts are annual Plants, which ſhould be ſown in the Spring on a Bed of freſh light Earth, where they are deſigned to remain; and when the Plants come up, they ſhould be thinned where they are too cloſe, and kept clear from Weeds; which is all the Culture they require. In *June* they will flower, and their Seeds will ripen ſoon after; which, if permitted to ſcatter, will furniſh a Supply of young Plants where-ever the Seeds fall.

The ſeventh and eighth Sorts grow wild in *England.* The ſeventh is a laſting Plant, which grows under Hedges, and in Woods, in divers Parts of *England*; but the eighth Sort is an annual Plant, which is uſually found on dry Hills in ſome Counties near *London*.

The tenth Sort differs from the common Sea Ragwort, in being much broader-leav'd, and not ſo hoary: this is a laſting Plant, which will endure the Froſt in the open Air very well, and may be treated as is directed for the common Sea Ragwort.

The eleventh and twelfth Sorts are alſo abiding Plants, which may have a Place in large Gardens, for the ſake of Variety. Theſe Plants have fine cut Leaves, and the Stems grow erect about two Feet high, on the Tops of which the Flowers grow in an Umbel, which are of a fine yellow Colour.

Theſe maybe propagated by Seeds, which ſhould be ſown the Beginning of *March*, on a Bed of freſh light Earth; and when the Plants come up, they ſhould be thinned where they are very cloſe together, that thoſe remaining may grow ſtronger: when they are ſtrong enough to remove, they ſhould be tranſplanted into a Bed of freſh Earth about ſix Inches apart, where they may remain till *Michaelmas*, being careful to keep them clear from Weeds; then they may be taken up, and tranſplanted into large Borders amongſt other hardy Plants; where they will flower the following Summer, and make an agreeable Variety.

The twentieth Sort was formerly nurs'd up with great Care, and preſerv'd in Winter amongſt Oranges, Myrtles, *&c.* in Green-houſes: but of late it has been tranſplanted into the open Air, where it is found to thrive exceeding well; and if planted in a dry Soil, and warm Situation, will very well endure the ſevereſt Cold of our Climate.

This Plant, tho' there is no great Beauty in its Flowers, yet, for the Oddneſs of its hoary regular jagged Leaves, deſerves to have a Place in every good Garden.

The twenty-firſt Sort is preſerved for the Beauty of its fine purple Flowers, which continue a long time; and growing in large Bunches, afford an agreeable Proſpect.

The twenty-ſecond and twenty-third Sorts grow to the Height of five or ſix Feet, and will abide ſeveral Years, if carefully preſerv'd in Winter from extreme Cold: theſe are commonly preſerv'd in the Green-houſe among other Exotic Plants, for their Variety.

All theſe Sorts may be propagated by Seeds, or Cuttings: but if you propagate them by Seeds, you ſhould ſow them in *March* upon a Bed of light Earth; obſerving to water the Bed frequently in dry Weather, otherwiſe the Plants will not come up. About the Middle of *May*, if your Seeds ſhould ſucceed well, the Plants will be fit to tranſplant out; at which time you ſhould put ſome of the two laſt Sorts into Pots fill'd with freſh light Earth, ſetting them in the Shade until they have taken Root; after which they may be expoſed in an open Situation until the latter End of *October*, when they muſt be removed into Shelter. During the Winter-ſeaſon they muſt be frequently water'd, without which they will ſoon decay; and in Summer they muſt be often pruned, eſpecially the twenty-firſt and twenty-ſecond Sorts, to make them regular; otherwiſe they are apt to be very rude and unſightly; for they grow very vigorouſly.

The twenty-firſt Sort will produce Flowers and Seeds the firſt Year, and is often treated as an annnal Plant: but if it be houſed in the Winter, it will live very well for two Years; but they ſhould be renewed every Year, otherwiſe they are ſubject to decay. The Cuttings of the twenty-ſecond Sort may be planted in a ſhady Border in any of the Summer-months; which, if carefully watered, will take Root in a Month's time, whereby they may be greatly increaſed.

The Sea Ragwort may be alſo propagated by Cuttings or Slips, which muſt be planted and managed as the others; and, when they are rooted, may be tranſplanted into a warm Situation, where they may continue to flower and ſeed. It is very ſubject to degenerate when rais'd from Seeds, whereby the Whiteneſs, which is the greateſt Beauty of this Plant, is greatly diminiſhed, eſpecially upon the upper Parts of their Leaves; ſo that the ſureſt Method is, to propagate it by Cuttings.

JALAPA, Marvel of *Peru*.

The *Characters* are;

It hath a long thick fleſhy ſucculent Root: the Leaves, which reſemble thoſe of Nightſhade, grow by Pairs oppoſite upon the Branches: the Stalks and Branches are very full of Knots: the Flower conſiſts of one Leaf, and is ſhaped like a Funnel: in the Centre of the Flower is placed the Ovary, inwrapp'd in the Flower-cups, which becomes an oblong five-corner'd umbilicated Fruit, conſiſting of a mealy Nut.

This Title was given to this Genus of Plants by Dr. *Tournefort*, upon the Information which he had received from Father *Plumier*, that the Jalap which was uſed in Medicine was one Species of this Genus; and accordingly he ſuppoſed it to be the ſeventh Species; but from better Authority we are now well aſſured, that the Jalap is a Species of *Convolvulus:* however, as theſe Plants have, for near half a Century, been known by this Title, I ſhall continue it; tho' Dr. *Linnæus* has altered it to *Mirabilis:* as by the old Writers in Botany it had been titled *Mirabilis Peruviana*, from whence the *Engliſh* Name of *Marvel of Peru:* but ſince the Title of *Mirabilis* was given to this Genus by Dr. *Linnæus*,

næus, it hath been altered by Dr. *Van Royen*, Profeſſor of Botany at *Leyden*, to *Nyctage*, from the Flowers opening in the Night.

The *Species* are;

1. Jalapa *flore flavo. Tourn.* Jalap, or Marvel of *Peru*, with a yellow Flower.

2. Jalapa *flore purpureo. Tourn.* Jalap, or Marvel of *Peru*, with a purple Flower.

3. Jalapa *flore exalbido. Tourn.* Jalap, or Marvel of *Peru*, with a whitiſh Flower.

4. Jalapa *flore ex rubro, luteo, & albo mixto. Tourn.* Jalap, or Marvel of *Peru*, with red, yellow, and white Flowers mix'd upon the ſame Plant.

5. Jalapa *flore ex albo & purpureo elegantiſſime variegato.* Jalap, or Marvel of *Peru*, with white and purple Flowers finely variegated.

6. Jalapa *parvo flore. Tourn.* Jalap with a ſmall Flower.

7. Jalapa *officinarum, fructu rugoſo. Tourn.* The ſuppoſed true Jalap of the Shops, with a rough Fruit.

Theſe Plants are all propagated by Seeds, which ſhould be ſown upon a moderate Hot-bed in *March*; and when they come up, they ſhould be tranſplanted into another Hot-bed, at ſix Inches Diſtance from each other; and when they have taken Root, the Glaſſes muſt be raiſed every Day, that the Plants may have a great deal of Air, otherwiſe they are very ſubject to be drawn up tall and weak; nor can they be recovered to a ſufficient Strength again in a Month's time, if once they are thus drawn. When the Plants are grown to be a Foot high, they ſhould be put into Pots filled with rich light Earth, which ſhould be plunged into a very moderate Hot-bed, to facilitate their taking Root: and in removing them you muſt be very careful to preſerve as much Earth to their Roots as you can; for their Roots have but few Fibres to retain it in a Ball, as many other Plants will do: and it ſometimes happens, when the Root is left bare, it ſeldom takes freſh Hold of the Ground, at leaſt not in a conſiderable time; ſo that the Plants will make but a poor Figure that Seaſon. When they are tranſplanted into the Pots, and have taken Root again, they ſhould be hardened to endure the open Air, for they are not very tender; but, on the contrary, they will not thrive well, if too much drawn or forced in the Hot-bed. In the Middle of *May* the Pots may be removed into the Places where they are deſigned to be continued for that Seaſon; obſerving to ſupport the Branches with a ſtrong Stake, and to water them as often as they require it. You may alſo in *May* plant ſome of them into the Middle of the large Borders of the Pleaſure-garden, doing it carefully, and obſerving to ſhade and water them until they have taken Root; after which, they will require no farther Care but to ſupport them from being broken down by the Winds, which they are very ſubject to be, eſpecially when their Heads are large.

The Plants, thus raiſed, will grow to the Height of three or four Feet, and ſpread their Branches very wide (eſpecially if the Roots have room in the Pots); their Flowers will begin to appear in *June*, and they will continue conſtantly flowering until the Froſt prevents them: which, together with the great Diverſity of Colours in the Flowers upon the ſame Plant, renders them valuable to every curious Perſon. The Flowers of theſe Plants never expand in the Day-time, while the Sun is hot; but in the Evening, when the Sun declines, they begin to open, and continue expanded till the Sun ſhines warm upon them the next Day; ſo that when it happens to be cloudy Weather, as alſo late in Autumn, when the Weather is cool, the Flowers will remain open moſt Part of the Day.

As the Flowers are produced ſucceſſively almoſt every Day, ſo the Seeds are in a ſhort time after ripe, and do ſoon fall to the Ground; ſo that when your Seeds begin to ripen, you muſt carefully look for them upon the Ground twice a Week; otherwiſe, if they lie too long upon the Ground, and there ſhould fall ſome Rain, they will ſprout, and be good for nothing. In ſowing theſe Seeds, you ſhould be careful to take them from ſuch Plants as produced the greateſt Variety of Flowers; for if you ſave them from ſuch as produce only plain-colour'd Flowers, the Seeds will always produce the ſame Sort; and thoſe with yellow and red variegated Flowers will conſtantly produce the ſame; theſe never varying from the Red and Yellow to the Purple and White, tho' they will ſometimes degenerate into plain yellow or red Flowers, as will the other into plain Purple or White; but they will conſtantly retain one or both of their original Colours.

Altho', in the above-written Culture of theſe Plants, I have directed their Seeds to be ſown on an Hot-bed, yet they may be propagated by ſowing them in a warm Border of light Earth toward the Latter end of *March*; and when the Plants come up, they ſhould be tranſplanted as before directed: in which Method they will ſucceed very well; but will not flower ſo ſoon by a Month or ſix Weeks as thoſe raiſed on the Hot-bed, nor will the Plants grow ſo large.

When the Froſt has pinch'd the Leaves and Stems of theſe Plants, you ſhould take up their Roots, which ſhould be laid to dry, and then may be preſerved in dry Sand all the Winter, if ſecured from the Froſt; and in the following Spring theſe Roots ſhould be planted into large Pots, and plunged into a moderate Hot-bed, to promote their taking Root; and when the Shoots appear above-ground, they ſhould be treated as was directed for the Seedling-plants, hardening them by degrees to endure the open Air. The Plants ſo raiſed will be much larger than the Seedlings, and will flower earlier in the Year.

The Sort with purple and white Flowers is by much the moſt beautiful: however, a few Plants of the yellow and red Sort may be intermixed with them, for Variety. Where any Perſon is very curious to preſerve the beſt Seeds, they ſhould conſtantly pinch off all the plain Flowers from thoſe Plants, which they intend for Seed: if this is carefully done, there will be ſcarce any of the Plants produced from this Seed with intire plain Flowers.

The two laſt Sorts are very common in the Iſlands of *America*, where by the *Engliſh* they are called the Four o'Clock Flower, from the Flowers opening about that time in the Afternoon; and by the *French* they are called *Belle de Nuit*, from the Flowers making a fine Appearance in the Night; but the Flowers of both of theſe are ſmall, and generally plain-colour'd; and the Plants are alſo much tenderer than thoſe of the other Sorts; ſo that theſe are ſeldom cultivated in *England*.

JASMINOIDES. *Vide* Ceſtrum and Lycium.

JASMINUM, The Jaſmine, or Jeſſamine-tree.

The *Characters* are;

The Leaves are in many Species pinnated: the Cup of the Flower conſiſts of one Leaf, but is divided at the Top into five Segments: the Flower conſiſts of one Leaf, is funnel-ſhaped, and divided into five Segments: the Flowers are ſucceeded by Berries, which ſplit in the Middle, each Side, for the moſt part, containing a ſeparate Seed.

The *Species* are;

1. JASMINUM *vulgatius, flore albo. C. B. P.* The common white Jaſmine.

2. JASMINUM *vulgatius, flore albo, foliis ex luteo elegantiſſime variegatis.* The common white Jaſmine, with yellow-ſtriped Leaves.

3. JASMINUM *vulgatius, flore albo, foliis ex albo elegantiſſime variegatis.* The common white Jaſmine, with white-ſtriped Leaves.

4. JASMINUM *humile luteum. C. B. P.* Dwarf yellow Jaſmine, commonly called, The *Italian* yellow Jaſmine.

5. JASMINUM *luteum, vulgo dictum bacciferum. C. B. P.* The common yellow Jaſmine.

6. JASMINUM *humilius, magno flore. C. B. P.* The *Spaniſh* white, or *Catalonian* Jaſmine.

7. JASMINUM *humilius, magno flore pleno.* The double *Spaniſh* Jaſmine.

8. JASMINUM *Indicum flavum odoratiſſimum. Fer. Flor.* The yellow *Indian* Jaſmine.

9. JASMINUM *Azoricum trifoliatum, flore albo, odoratiſſimum. H. A.* The three-leav'd *Azorian* Jaſmine, with very ſweet white Flowers, commonly called, The Ivy-leav'd Jaſmine.

10. JASMINUM *ſive Sambach Arabum, Alpini. J. B.* The ſingle *Arabian* Jaſmine.

11. JASMINUM *Arabicum, foliis limonii conjugatis, flore albo pleno odoratiſſimo. Boerh. Ind.* The double *Arabian* Jaſmine.

12. JASMINUM *Arabicum, caſtaneæ folio, flore albo odoratiſſimo, cujus fructus Coffee in officinis dicuntur nobis. Com. Pl. Uſ.* The Coffee-tree.

13. JASMINUM *Malabaricum, foliis mali aurantii, flore niveo odoratiſſimo. Com.* Jaſmine of *Malabar*, with Orange-leaves, and a ſnow-white very ſweet-ſcented Flower.

14. JASMINUM *Americanum, foliis conjugatis, floribus ſpicatis albis. Houſt. American* Jaſmine, with Leaves growing oppoſite, and white Flowers growing in Spikes.

15. JASMINUM *arboreſcens, foliis laurinis, flore umbellato. Houſt.* Tree-like Jaſmine, with Bay-leaves, and Flowers growing in an Umbel.

The firſt Sort is very common in moſt *Engliſh* Gardens, being much cultivated for the Sweetneſs of its Flowers. The ſecond and third Sorts are accidental Varieties from the firſt, and may be obtained by inoculating the Buds of theſe into the common Jaſmine; which, altho' the Buds ſhould periſh, as it often happens, yet it ſeldom fails to ſtain both the Leaves and Branches of the old Plant into which the Buds were put: ſo that by inoculating ſome of theſe Buds into ſome young Branches in divers Parts of an old Tree, they will not fail to tinge the whole Tree in a ſhort time.

The common white Jaſmine is eaſily propagated by laying down the tender Branches in the Spring; which, by the ſucceeding Spring, will be rooted ſtrong enough to be tranſplanted. They may alſo be raiſed by Cuttings, which ſhould be planted in Autumn in a moiſt Border, where they may have the morning Sun: but they muſt be ſcreened from the Violence of the Sun in the Heat of the Day, and frequently watered in dry Weather. The Cuttings, thus managed, will many of them live, and have Roots fit to be removed in the following Spring: but this Method is ſeldom practiſed, the Layers always making the beſt Plants.

When theſe Plants are removed, they ſhould be planted where they are deſign'd to be continued; which ſhould be either againſt ſome Wall, Pale, or other Fence, where the flexible Branches may be ſupported: for altho' it is ſometimes planted as a Standard, and form'd into an Head, yet it will be very difficult to keep it in any handſome Order; or if you do, you muſt cut off all the flowering Branches; for the Flowers are always produced at the Extremity of the ſame Year's Shoots, which, if ſhorten'd before the Flowers are blown, will intirely deprive the Trees of Flowers. Theſe Plants ſhould be permitted to grow rude in the Summer, for the Reaſon before given: nor ſhould you prune and nail them until the Middle or Latter-end of *March*, when the froſty Weather is paſt; for if it ſhould prove ſharp froſty Weather after their rude Branches are pruned off, and the ſtrong ones are expos'd thereto, they are very often deſtroyed; and this Plant being very backward in ſhooting, there will be no Danger of hurting them by late pruning.

The two ſtrip'd Sorts ſhould be planted in a warm Situation, eſpecially the white-ſtrip'd; for they are much more tender than the plain, and are very ſubject to be deſtroyed by great Froſts, if they are expos'd thereto: therefore it will be proper to preſerve a Plant of each Kind in Pots, which may be removed into the Green-houſe in Winter, leſt, by expoſing them to the Cold, they ſhould all be deſtroyed, and the Variety loſt.

The common yellow Jaſmine was formerly in greater Plenty in *England* than at preſent, and was planted againſt Arbours, &c. to cover them, tho' it is not near ſo proper for that Purpoſe as the white Sort, it being of much ſlower Growth, nor will it ever extend its Branches ſo far as that; but however, it may have a Place among the flowering Shrubs of low Growth, where it may be with more Eaſe reduced to a Standard than the other. This Plant flowers in *May* and *June*; but they have very little Scent, which has occaſioned its being leſs regarded. It may be propagated by Suckers, which it generally produces in great Numbers; or by Layers, as was directed for the common Sort; and are full as hardy. This Sort ſeldom riſes above five or ſix Feet high.

The Dwarf yellow Jaſmine is ſomewhat tenderer than the former; yet will it endure the Cold of our ordinary Winters, if it be planted in a warm Situation. The Flowers of this Kind are generally larger than thoſe of the common Sort, and better ſcented; but are ſeldom produced ſo early in the Seaſon. It may be propagated by laying down the tender Branches, as was directed for the common white Sort; or by budding or inarching it upon the common yellow Jaſmine; the latter of which is preferable, as making the Plants hardier than thoſe which are obtained from Layers: they ſhould be planted againſt a warm Wall; and in very ſevere Winters will require to be ſheltered with Mats, or ſome other Covering, otherwiſe they are ſubject to be deſtroyed. The Manner of Dreſſing and Pruning being the ſame as was directed for the white Jaſmine, I ſhall not repeat it.

The *Spaniſh* white, or *Catalonian* Jaſmine, is one of the moſt beautiful of all the Sorts, as alſo extremely ſweet-ſcented: the Flowers of this Kind are much larger than any of the others, and are commonly of a red Colour on the Outſide. This Plant is propagated by budding or inarching it upon the common white Jaſmine, on which it takes very well, and is rendered hardier than thoſe which are upon their own Stocks. But thoſe of this Kind being brought over from *Italy* every Spring in ſo great Plenty, they are ſeldom raiſed here: I ſhall therefore proceed to the Management of ſuch Plants as are uſually brought into *England* from the Place above-mentioned, which generally are ty'd up in ſmall Bunches, containing three or four Plants, and their Roots wrapp'd about with Moſs, to preſerve them from drying: which, if it happen that the Ship has a long Paſſage, will often occaſion them to puſh out ſtrong Shoots from their Roots, which muſt always be taken off before they are planted; otherwiſe they will exhauſt the whole Nouriſhment of the Plant, and deſtroy the Graft.

In the making Choice of theſe Plants, you ſhould carefully obſerve if their Grafts are alive, and in good Health: for if they are brown and ſhrunk, they will not puſh out; ſo that there will be only the Stock left, which is of the common Sort.

When you receive theſe Plants, you muſt clear the Roots of the Moſs, and all decay'd Branches ſhould be taken off: then place their Roots into a Pot or Tub of Water, which ſhould be ſet in the Green-houſe, or ſome other Room, where it may be ſcreened from the Cold: in this Situation they may continue two Days; after which you muſt prune off all the dry Roots, and cut down the Branches within four Inches of the Graft, and plant them into Pots filled with freſh light Earth; then plunge the Pots into a moderate Hot-bed of Tanners Bark, obſerving to water and ſhade them, as the Heat of the Seaſon may require. In about three Weeks or a Month's time they will begin to ſhoot, when you muſt carefully rub off all ſuch as are produced from the Stock below the Graft; and you muſt now let them have a great Share of Air, by raiſing the Glaſſes in the Heat of the Day: and as the Shoots extend, they ſhould be topp'd, to ſtrengthen them, and, by degrees, ſhould be hardened to endure the open Air, into which they ſhould be removed in *June*; but muſt have a warm Situation the firſt Summer; for if they are too much expoſed to the Winds, they will make but indifferent Progreſs, being rendered ſomewhat tender by the Hot-bed. If the Summer proves warm, and the Trees have ſucceeded well, they will produce ſome Flowers in the Autumn following, tho' they will be few in Number, and not near ſo ſtrong as they will be the ſucceeding Years, when the Trees are ſtronger, and have better Roots.

Theſe Plants are commonly preſerved in Green-houſes, with Oranges, Myrtles, *&c.* and, during the Winter-ſeaſon, will require to be frequently watered, which ſhould be performed ſparingly each time, eſpecially in cold Weather; for too much Wet at that Seaſon will be apt to rot the Fibres of their Roots: they ſhould alſo have a great Share of freſh Air, when the Weather will permit; for which Purpoſe, they ſhould be placed in the cooleſt Part of the Green-houſe, among Plants that are hardy, where the Windows may be opened every Day, except in froſty Weather: nor ſhould they be crouded too cloſe among other Plants, which often occaſions their growing mouldy, and decays the younger Branches. In *April* the Shoots of theſe Plants ſhould be ſhortened down to four Eyes, and all the weak Branches ſhould be cut off; and if you have the Conveniency of a Glaſs-ſtove, or a deep Frame, to place the Pots into at that Seaſon, to draw them out again, it will be of great Service in forwarding their Flowering: yet ſtill you ſhould be careful not to force them too much; and as ſoon as they have made Shoots three or four Inches long, the Glaſſes ſhould be opened in the Day-time, that the Plants may, by degrees, be inured to the open Air; into which they ſhould be removed by the Latter-end of *May*, or the Beginning of *June*; otherwiſe their Flowers will not be ſo fair, nor continue ſo long. If the Autumn proves favourable, theſe Plants will continue to produce freſh Flowers until *Michaelmas*; and ſometimes, when they are ſtrong, they will continue flowering till *Chriſtmas*, or after: but then they muſt have a great Share of Air when the Weather is mild, and will admit of it; otherwiſe the Flower-buds will grow mouldy, and decay.

But notwithſtanding moſt People preſerve theſe Plants in Green-houſes, yet they will endure the Cold of our ordinary Winters in the open Air, if planted againſt a warm Wall, and covered with Mats in froſty Weather; they will alſo produce ten times as many Flowers in one Seaſon as thoſe kept in Pots, and the Flowers will likewiſe be much larger: but they ſhould not be planted abroad till they have ſome Strength; ſo that it will be neceſſary to keep them in Pots two or three Years, whereby they may be ſheltered from the Froſt in Winter: and when they are planted againſt the Wall, which ſhould be in *May*, that they may take good Root in the Ground before the ſucceeding Winter, you muſt turn them out of the Pots, preſerving the Earth to their Roots; and having made Holes in the Border where they are to be planted, you ſhould place them therein, with their Stems cloſe to the Wall; then fill up the Holes round their Roots with good freſh rich Earth, and give them ſome Water, to ſettle the Ground about them; and nail up their Shoots to the Wall, ſhortening ſuch of them as are very long, that they may puſh out new Shoots below, to furniſh the Wall, continuing to nail up all the Shoots as they are produced. In the middle, or toward the Latter-end, of *July*, they will begin to flower, and continue to produce new Flowers until the Froſt prevents them; which when you obſerve, you ſhould carefully cut off all the Tops of ſuch Shoots as have Buds form'd upon them, as alſo thoſe which have the Remains of faded Flowers left; for if theſe are ſuffered to remain on, they will ſoon grow mouldy, eſpecially when the Trees are covered, and thereby infect many of the tender Branches, which will greatly injure the Trees.

Toward the Middle or End of *November*, if the Weather be cold, and the Nights froſty, you muſt begin to cover your Trees with Mats, which ſhould be nail'd over them pretty cloſe; but this ſhould be done when the Trees are perfectly dry, otherwiſe the Wet, being lodged upon the Branches, will ſoon cauſe a Mouldineſs upon them, and, the Air being excluded therefrom, will rot them in a ſhort time: it will alſo be very neceſſary to take off theſe Mats as often as the Weather will permit, to prevent this Mouldineſs, and only keep them cloſe covered in froſty Weather; at which time you ſhould alſo lay ſome Mulch upon the Surface of the Ground about their Roots, and faſten ſome Bands of Hay about their Stems, to guard them from the Froſt; and in very ſevere Weather, you ſhould add a double or treble Covering of Mats over the Trees; by which Method, if duly executed, you may preſerve them thro' the hardeſt Winters. In the Spring, as the Weather is warmer, ſo you ſhould by degrees take off the Covering; but you ſhould be careful not to expoſe them too ſoon to the open Air, as alſo to guard them againſt the morning Froſts, and dry Eaſterly Winds, which often reign in *March*, to the no ſmall Deſtruction of tender Plants, if they are expoſed thereto; nor ſhould you quite remove your Covering until the middle of *April*, when the Seaſon is ſettled, at which time you ſhould prune the Trees, cutting out all decayed and weak Branches, ſhortening the ſtrong ones to about two Feet long, which will cauſe them to ſhoot ſtrong, and produce many Flowers.

The Double of this Kind is at preſent very rare in *England*, and only to be found in ſome very curious Gardens; tho' in *Italy* it is pretty common, from whence it is ſometimes brought over amongſt the Single: the Flowers of this Kind have only two Rows of Leaves, ſo that it is rather regarded for its Curioſity, than for any extraordinary Beauty in the Flowers: this may be propagated by budding it upon the common white Jaſmine, as hath been directed for the Single, and muſt be treated in the ſame Manner.

Dr. *Linnæus* ſuppoſes, that this Sort is only a Variety of the common Jaſmine; and that the only Difference is in the Size and Colour of the Flower; and, as a Proof of it, ſays, that when it is propagated by Layers or Shoots from the Root, it always becomes the common Sort: but if he had obſerved, that all thoſe Shoots are produced from the Stock, which is always of the common Jaſmine, and not from the Sort grafted, he would have ſoon found his Miſtake; for there can be no Diſpute of this being a diſtinct Species; for the Number and Shape of the *Pinnæ* of the Leaves, the Segments of the Empalement, and the Petals of the Flower being twiſted and diſtorted, conſtitute an eſſential Difference between them.

The yellow *Indian* Jaſmine is propagated either by Seeds, or laying down the tender Branches: if you would propagate them by Seeds, which they often produce in *England* in great Plenty, you ſhould make a moderate Hot-bed in the Spring, into which you ſhould plunge ſome ſmall Pots filled with freſh light Earth; and in a Day or two after, when you find the Earth in the Pots warm, you muſt put your Seeds therein; about four in each Pot will be ſufficient, covering them about an Inch thick with the ſame light Earth, and obſerve to refreſh the Pots with Water as often as you ſhall perceive the Earth dry; but do not give them too much at each time, which would be apt to rot the Seeds.

In about ſix or eight Weeks after ſowing, the Plants will appear above-ground; at which time it will be neceſſary to remove the Pots into another freſh Hot-bed, of a moderate Temperature, in order to bring the Plants forward; you muſt alſo be careful to water them as often as is neceſſary; and in the great Heat of the Day the Glaſſes ſhould be tilted pretty high, and ſhaded with Mats, to prevent the Plants from being ſcorch'd with Heat: about the middle of *May* you ſhould begin to harden them to the open Air, by takeing off the Glaſſes when the Weather is warm; but this muſt be done cautiouſly; for you ſhould not expoſe them to the open Sun in a very hot Day at firſt, which would greatly injure them; but rather take off the Glaſſes in warm cloudy Weather at firſt, or in gentle Showers of Rain, and ſo by degrees inure them to bear the Sun; and in *June* you ſhould take the Pots out of the Hot-bed, and carry them to ſome well-ſheltered Situation, where they may remain until the Beginning of *October*; at which time they muſt be carried into the Green-houſe, obſerving to place them where they may enjoy as much free Air as poſſible when the Windows are opened; as alſo to be clear from the Branches of other Plants.

During the Winter ſeaſon they will require to be often watered; but you muſt be careful not to give them too much at each time; and in *March* you muſt remove theſe Plants each into a ſeparate Pot, being careful not to take the Earth from their Roots; and if at this time you plunge them into a freſh moderate Hot-bed, it will greatly facilitate their Rooting again, and be of great Service to the Plants; but when you perceive they are freſh rooted, you muſt give them a great deal of Air; for if you draw them too much, they will become weak in their Stems, and incapable to ſupport their Heads; which is a great Defect in theſe Trees.

You muſt alſo harden them to the open Air, into which they ſhould be removed about the Middle of *May*, obſerving, as was before directed, to place them in a Situation that is defended from ſtrong Winds, which are injurious to theſe Plants, eſpecially while they are young. In Winter, houſe them, as before, and continue the ſame Care; with which they will thrive very faſt, and produce annually great Quantities of Flowers.

Theſe Plants are pretty hardy, and will require no other Care in Winter, than only to defend them from hard Froſts; nor do I know whether they would not live in the open Air, if planted againſt a warm Wall, which is what ſhould be tried by planting ſome againſt a Wall for that Purpoſe; and I think we have little Reaſon to doubt of the Succeſs, ſince they are much hardier than the *Spaniſh*: but there is this Difference between them; *viz.* theſe Plants have large, thick, ever-green Leaves, ſo that if they were covered with Mats, as was directed for the *Spaniſh* Jaſmine, the Leaves would rot, and decay the Shoots; but as theſe will only require to be covered in extreme Froſt, ſo, if their Roots are well mulch'd, and a Mat or two looſely hung over them in ordinary Froſts, it will be ſufficient; and theſe Mats being either rolled up, or taken quite off, in the Day, there will be no great Danger of their being hurt, which only can proceed from being too long cloſe covered.

In the Spring theſe ſhould be

pruned, when you ſhould cut off all decay'd Branches; but you muſt not ſhorten any of the other Branches, as was directed for the *Spaniſh* Sort; for the Flowers of this Kind are produced only at the Extremity of the Branches, which if ſhortened, they would be cut off; and theſe growing of a more ligneous Subſtance than the other, will not produce Shoots ſtrong enough to flower the ſame Year.

If you would propagate this Plant from Layers, the Shoots ſhould be laid down in *March*; and if you give them a little Cut at the Joint, as is practiſed in laying of Carnations, it will promote their Rooting: you ſhould always obſerve to refreſh them often with Water, when the Weather is dry; which if carefully attended to, the Plants will be rooted by the ſucceeding Spring, fit to be tranſplanted, when they muſt be planted in Pots filled with light Earth, and managed as was before directed for the Seedling-plants.

This Sort is frequently propagated by inarching the young Shoots into Stocks of the common yellow Jaſmine; but the Plants ſo raiſed do not grow ſo ſtrong as thoſe which are upon their own Stock: beſides, the common yellow Jaſmine is very apt to ſend out a great Number of Suckers from the Root, which renders the Plants unſightly: and if theſe Suckers are not conſtantly taken off, as they are produced, they will rob the Plants of their Nouriſhment.

The *Azorian* Jaſmine is alſo pretty hardy, and requires no more Shelter than only from hard Froſts; and I am apt to think, if this Sort was planted againſt a warm Wall, and managed, as hath been directed for the yellow *Indian* Jaſmine, it would ſucceed very well; for I remember to have ſeen ſome Plants of this Kind growing againſt a Wall in the Gardens at *Hampton-Court*, where they had endured the Winter, and were in a more flouriſhing State than any I have ſeen in Pots, and produced a greater Quantity of Flowers. Theſe Plants are propagated in the ſame manner as the yellow *Indian*, and require the ſame Management. The Flowers of this Kind are ſmall; but being produced in large Bunches, make an handſome Figure, and are of a very agreeable Scent; and the Leaves being large, and of a ſhining-green Colour, add to the Beauty of the Plant very much.

The Ilex-leav'd Jaſmine is by Dr. *Linnæus* removed from this Genus, and joined to the *Camara* of *Plumier*, under the Title of *Lantana*; which is an old Name applied by many Authors to the common *Viburnum*, under which Title I have alſo placed it.

The *Arabian* Jaſmines of both Sorts are commonly brought into *England* from *Genoa* every Spring amongſt the *Spaniſh* Jaſmines. Theſe are all grafted upon the common Jaſmine-ſtock, as are the *Spaniſh*; but being much tenderer than thoſe, are very often greatly injured in their Paſſage, which is always in the Winter-ſeaſon; ſo that you ſhould carefully examine them (when you purchaſe them of the *Italians*, who bring them over) to ſee if their Grafts are freſh and ſound; if ſo, there is little Danger of their ſucceeding. Theſe muſt be put into Water, and waſhed, pruning their Roots and Branches, and planting them as was directed for the *Spaniſh* Jaſmines; to which I ſhall refer the Reader, to avoid Repetition.

Theſe Plants are more tender than any of the Sorts before-mentioned, and muſt be preſerved in a warm Stove in Winter; nor ſhould they be expoſed to the open Air in Summer, if you would have them flower well; tho' indeed the Plants will live and thrive in the open Air in *June*, *July*, and *Auguſt*; but then they will rarely produce any Flowers; and thoſe which may appear, are eaſily deſtroyed by either Winds or Rain, both which will ſoon ſcatter them, being but ſlenderly faſtened upon the Plants. The only Method in which I have found theſe Plants to thrive and flower well, is this; *viz.* After having preſerved the Plants in a moderate Stove all the Winter, I cleans'd their Leaves and Stems from Duſt; then I took out the Earth from the Upper-part of the Pots, and filled them with freſh Earth; then I plunged the Pots into a moderate Bed of Tanners Bark, which had loſt moſt of its Heat: this occaſions the Plants to ſhoot very ſtrong; and in *June* and *July* I had great Quantities of Flowers, which were exceeding ſweet, but of a ſhort Duration, ſeldom continuing longer than two Days: however, theſe were ſucceeded by freſh Flowers thro' the greateſt Part of *June* and *July*, during which time my Plants were never intirely deſtitute of Flowers.

Theſe Jaſmines may alſo be propagated by laying down their tender Branches in the Spring, in the ſame manner as was directed for the yellow *Indian*-Jaſmine, which will take Root in leſs than three Months, provided the Pots are plunged into an Hot-bed, otherwiſe they will not be rooted until the ſucceeding Spring. Theſe muſt be planted into a light ſandy Earth, and frequently watered in hot Weather; but during the Winter-ſeaſon, it muſt be given them but ſparingly; for too much Moiſture at that time will deſtroy them.

This is made a diſtinct Genus by Dr. *Linnæus*, by the Name of *Nyctanthes*, from the Flowers of this falling in the Night; ſo that in the natural Places of its Growth, where the Plants abound with Flowers, the Surface of the Ground under them is frequently covered with Flowers every Morning; from whence the Plant has been by ſome called *Arbor triſtis*, or the Sorrowful-tree.

The Sort with duoble Flowers, which we have now in *England*, has rarely more than two Rows of Leaves, as I obſerved in the *Spaniſh*; ſo that it is but little better than the ſingle: but there is another Sort of this Jaſmine, which was formerly in *England*, and is now in the Duke of *Tuſcany*'s Gardens at *Piſa*, which produces Flowers almoſt as large as a Cinnamon Roſe, and as double, as alſo of a moſt inoffenſive ſweet Scent; but this is not in *England* at preſent, nor is it likely to be obtained here, ſince it is not known to be growing in any other Part of *Europe* but the Garden at *Piſa*, where it is kept under a Guard, to prevent its being ſtolen away: ſuch is the narrow Temper of the preſent Poſſeſſor, that he will not ſuffer it to be diſtributed into any other Gardens; tho' the Profeſſor of Botany to that Garden ſays, it increaſes greatly by Layers; by which means all *Europe* might be ſoon ſupplied with this valuable Plant, were it but once in the Poſſeſſion of any communicative Perſon.

The Coffee-tree is propagated by Seeds, which ſhould be ſown ſoon after they are gathered from the Tree: for if they are kept but a ſhort time out of the Ground, they will not grow; which is the chief Reaſon, that this Tree has not been ſpread into more different Countries; for the Seeds will not keep good long enough to be ſent to any diſtant Place: ſo that, in order to cultivate this Plant in any Part of the World, it is abſolutely neceſſary to have it carried thither growing; but as this Difficulty is now overcome, by the Quantity of theſe Trees there are now growing both in *Europe* and *America*, we may expect to be furniſhed with Coffee from many different Parts, but eſpecially from the *Caribbee* Iſlands, where the Trees are found to ſucceed as well as in their native Place of Growth: but whether the Coffee produced in the *Weſt-Indies* will prove as good as that brought from *Mocha*, Time will diſcover; but if it ſhould, it may be of great Advantage not only to the Inhabitants there, but alſo may turn to great Account to the *Weſt-India* Trade. The manner how this Tree was firſt brought into *Europe*, and the ſeveral Parts of the World to which it is now ſpread, may be fully ſeen in Dr. *Douglas*'s curious Account of the Coffee-tree, publiſh'd at *London*, *Anno* 1727.

The Berries of this Plant are commonly ripe with us in *April*, at which time they ſhould be ſown in Pots of freſh light Earth, covering them about half an Inch thick with the ſame light Earth: then plunge the Pots into a moderate Hot bed of Tanners Bark, obſerving to refreſh them often with Water; as alſo to raiſe the Glaſſes in the Heat of the Day, to admit freſh Air; and in very hot Weather it will be proper to ſhade the Glaſſes with Mats, otherwiſe the Earth in the Pots will dry too faſt, and prevent the Vegetation of the Seeds. I muſt here obſerve, that the taking off the Pulp of the Berries, which has been by ſome People directed as abſolutely neceſſary before they are planted, is a great Miſtake; for I have experienced, that thoſe Berries which were planted whole as they came from the Tree, produced ſtronger Plants, and came up ſooner, than thoſe which were cleared from the Pulp; and altho' there are commonly two Seeds in each Berry (both which ſeldom fail to grow), yet when the Plants are young, they are eaſily parted, and planted into ſeparate Pots; which is abſolutely neceſſary to be done when they are about an Inch and an half high. When theſe Plants are removed, great Care ſhould be taken not to break or injure their Roots, as alſo to preſerve the Earth to their Roots: nor ſhould they be kept any time out of the Ground; for if their Fibres are ſuffer'd to dry, they are very ſubject to mould, and periſh ſoon after.

The Soil in which I have found theſe Plants to thrive beſt, was compos'd in the following manner; *viz.* one Load of freſh light loamy Earth, and half a Load of rotten Cow-dung: theſe were well mix'd together, and laid in an Heap ſix Months before it was uſed; in which Space it was turn'd ſeveral times, the better to incorporate the ſeveral Parts.

It muſt alſo be obſerved, that in tranſplanting theſe Plants, they ſhould never be put into Pots too large, in which they ſeldom thrive. The young Plants, when taken out of the Pots in which they were ſown, ſhould be planted each into a ſmall Halfpeny Pot fill'd with the above-mention'd Earth, and then plung'd into a moderate Hot-bed of Tanners Bark; obſerving to water them frequently, though they ſhould not have too much given them at one time: the Glaſſes ſhould alſo be raiſed, to admit freſh Air every Day, and in the Heat of the Day ſhould be ſhaded with Mats; for if they are too much expoſed to the Sun, they will perſpire ſo freely, as to have little Moiſture remaining in their Leaves; whereby they will hang, and appear very ſickly, as will alſo the tender Shoots, by which their Growth will be greatly retarded. As theſe Plants advance in Height, they ſhould have a greater Proportion of freſh Air at all times when the Weather is warm; and their Waterings ſhould be frequently repeated, though it muſt be perform'd with great Moderation; for too much Moiſture is very ſubject to rot the Roots; and when once the Roots are decay'd, it ſeldom happens that thoſe Plants are ever recover'd, though managed with all poſſible Skill and Care.

During the Winter-ſeaſon theſe Plants ſhould be placed in a Bark-ſtove, that the Fibres of the Roots may not be too much dried (which often happens when the Pots are placed upon Shelves in a dry Stove), whereby the Top-ſhoots of the Plants are often decayed, and the Leaves are apt to turn brown, and fall off, which is of very ill Conſequence to them; for if once the Leaves fall intirely off, the Plants are ſeldom recovered again ſo as to be beautiful.

This Stove ſhould be kept up to the Ananas Heat (mark'd on the Botanical Thermometers), with which they thrive better than in a greater Warmth; for if they are kept overhot, they perſpire too freely; which will cauſe their Leaves to droop, and change their Colour. In this Situation they ſhould be frequently water'd; but this muſt be perform'd ſparingly.

You muſt alſo clean their Leaves frequently from Filth, which they are ſubject to contract when ſhut up cloſe; as alſo many ſmall Inſects are harbour'd upon the Surfaces of the Leaves, which, if not carefully clean'd off, will greatly injure the Plants. The beſt Method to clean off theſe, is with a ſoft woollen Cloth, or a Sponge, dipt in Water, with which you may eaſily waſh them off: but you ſhould be careful not to bruiſe their Leaves, nor to wet them too much, eſpecially in the Depth of Winter.

You ſhould alſo be careful, in placing them in the Stove, not to ſet them under the Branches of other Plants, nor too cloſe to them, whereby their Branches may entangle therewith; which will cauſe them to ſhed their Leaves, or at leaſt occaſion their diſcolouring; and in the Spring, when their Bloſſoms begin to appear, they muſt be more frequently water'd, as alſo their Leaves and Branches often clean'd; which will cauſe their Leaves to look of a beautiful Green, their Flowers to be ſtrong, and their Fruit will ſet the better.

In the Summer they muſt be continu'd in the Stove, with their Pots plung'd in Bark (which ſhould not be too hot): but they muſt have a great Share of freſh Air in warm Weather, and the Glaſſes ſhould be ſhaded in the Heat of the Day: for they do not care to be too much expoſed to the direct Rays of the Sun, which occaſions their tender Shoots and Leaves to flag and hang down, and thereby retards the Growth of the Plants. You muſt alſo obſerve to ſhift them into freſh Earth, whenever you find their Roots to ſhoot thro' the Holes at the Bottom of the Pots: but this will ſcarce happen oftener than twice a Year; ſo that I would adviſe the ſhifting them in

May, and the Beginning of *Auguſt*, which are the propereſt Seaſons for this Work: but in the doing of it, you ſhould be careful to preſerve the Earth to their Roots, and only to pare off the Outſide of the Ball, cutting away all mouldy or decay'd Fibres: then put them into Pots one Size bigger than thoſe which they came out of, filling up the Pots with the before-mention'd Earth; obſerving to water and ſhade them, as the Heat of the Weather ſhall require. And if at theſe times you mix a little new Bark in the Bed to add a freſh Heat thereto, before the Pots are plung'd therein, it will greatly facilitate their rooting again: but you muſt be careful not to make the Bed too hot. You ſhould alſo, in Summer-time, refreſh all the Branches and Leaves of the Trees, by watering them gently with a fine-headed Watering-pot all over their Heads; and if in a very warm gentle Shower of Rain you draw off the top Glaſſes of the Stove, and let them receive the Benefit thereof, it will be of great Service to them: but you muſt be careful not to expoſe them to hard Rains, or ſtrong Winds, which would prove very hurtful to them.

Theſe Directions, if carefully attended to, will be found ſufficient to inſtruct any Perſon in the Culture of this beautiful Plant; and although there may, perhaps, ſomething occur to them which is not here related, yet I believe it will rarely happen, but that the Appearances, be they from what Cauſe ſoever, may be found owing to ſome Neglect, or contrary Practice to this here mentioned. But before I leave this Head, I cannot help mentioning another Method in which I have propagated this Plant; which is, by laying down ſome of their tender Shoots into Pots of Earth in the Spring of the Year, ſlitting them at a Joint (as is practiſed in laying Carnations), obſerving to refreſh them frequently with Water, and in about three Months time they will be rooted enough to tranſplant; when they ſhould be gently cut from the old Plant, and planted into ſeparate Pots, managing them as was directed for the Seedling-plants: but the Plants ſo raiſed never grow ſo vigorous as thoſe raiſed from the Berries.

There are ſome who have aſſerted, that this Plant will grow from Cuttings: but of all the different Trials which I have made, I could never obtain one Plant that Way, though many times the Cuttings have remain'd freſh for ſeveral Months, and ſometimes have made ſmall Shoots; yet, upon taking them up, they have not had the leaſt Appearance of any Roots.

The Coffee-tree has of late Years been much cultivated in the Iſlands of *America*, both by the *Engliſh* and *French*: but the Coffee which has been brought to *Europe* from thence, has been very little eſteemed; ſo that the Price of it has been much leſs than of that which comes from the *Eaſt-Indies*. This great Difference in Goodneſs many Perſons have attributed to the Soil in which it grows, and therefore have ſuppoſed it impoſſible for the Inhabitants of the *Britiſh* Iſlands ever to cultivate this Commodity to any real Advantage: but this is certainly a Miſtake; for I have been aſſured by ſeveral Perſons of undoubted Credit, who have reſided in thoſe Iſlands, that the Berries which they have gathered from the Trees, and roaſted themſelves, were as well flavoured as any of the Coffee which is brought from *Mocha*. And this I can readily believe from the Trials which have been made with the Berries which have been produced in *England*; which were as well flavoured as any Coffee brought from the *Eaſt-Indies*; ſo that the Fault is in the drying, packing, and bringing over: for if in the drying of the Berries they are laid in the Rooms near the Sugar-works, or near the Houſe where the Rum is diſtilled, the Berries will ſoon imbibe the *Effluvia* of theſe, which will greatly alter their Flavour.

Alſo the Coffee brought in the ſame Ships with Rum and Sugar, were the Coffee ever ſo good, would by this be intirely altered: for there is ſcarce any thing more likely to be injured by being near ſtrong *Effluvia*, than Coffee; for one Gallon of Rum, Spirit of Wine, or other ſtrong Liquors, being placed but two or three Days in the ſame Room with an hundred Weight of Coffee, will communicate the Flavour to the Whole, and greatly damage it; as I have experienc'd: ſo that if the Planters in *America* propoſe to cultivate this Commodity, they ſhould be particularly careful in drying the Berries, as alſo in the Packing up, and ſhould ſend the Coffee over in Ships where there is neither Sugar nor Rum: and if this were duly obſerved, I dare anſwer, the Planters would find their Account in it.

As a Proof of what is here mentioned, I need only relate what has happened to Coffee which came from *India*, by being brought over in Ships, where there was Pepper: the Coffee imbibed the ſtrong *Effluvia* of the Pepper, which rendered it of no Value.

IBERIS, Sciatica-creſs.

The *Characters* are;

The Empalement of the Flower conſiſts of four Leaves, which are vertically oval: the Flower has four Leaves, which are unequal, two of them being longer, and ſpread broader, than the other: in the Centre of the Flower is ſituated the Pointal, attended by ſix Stamina, *two of which are ſhorter than the other: the Pointal afterward changes to a roundiſh compreſſed Pod, having two Cells, each containing one oval Seed.*

The *Species* are;

1. Iberis *foliis cuneiformibus obtuſis integerrimis. Lin. Hort. Cliff.* Sciatica-creſs with whole blunt Leaves, commonly called the Tree-candy-tuft.

2. Iberis *foliis linearibus acutis integerrimis. Lin. Hort. Cliff.* Sciatica-creſs with narrow-pointed whole Leaves, commonly called Perennial Candy-tuft.

3. Iberis *foliis lanceolatis acuminatis, inferioribus ſerratis, ſuperioribus integerrimis. Lin. Hort. Cliff.* Sciatica-creſs with ſpear-ſhaped pointed Leaves, the under being ſawed, but the upper being intire, commonly called Candy-tuft.

4. Iberis *foliis linearibus ſuperne dilatatis ſerratis. Flor. Leyd.* Sciatica-creſs with narrow Leaves dilated at their Top, and ſawed.

5. Iberis *foliis ſinuatis, caule nudo ſimplici. Lin. Hort. Cliff.* Sciatica-creſs with ſinuated Leaves, and a ſingle Stalk.

6. Iberis *foliis lanceolatis acutis ſubdentatis, floribus racemoſis. Lin. Hort. Upſal.* Sciatica-creſs with acute ſpear-ſhaped Leaves indented at their Top, and Flowers growing in Bunches.

This Genus of Plants was by Dr. *Tournefort* titled *Thlaſpidium*; which being a compound Name, Dr. *Linnæus* has applied this of *Iberis* to it; which is an old Name for a Plant of this Claſs; whoſe Characters agreeing

ing with thoſe of *Lepidium*, it has been placed in that Genus.

The firſt Sort here mentioned is a low ſhrubby Plant, which ſeldom riſes above a Foot and an half high, having many ſlender Branches, which ſpread on every Side, and fall to the Ground, if they are not ſupported. Theſe Branches are well furniſhed with Leaves toward their Extremity, which continue green all the Year; and in the Autumn the Flowers are produced at the End of the Shoots, which are white, and grow in an Umbel. Theſe Flowers continue long in Beauty, and are ſucceeded by others; ſo that the Plants are rarely deſtitute of Flowers for near eight Months, from the End of *October* to the Beginning of *June*, which renders the Plant valuable.

This Plant is ſomewhat tender; therefore is generally preſerved in Green-houſes in Winter; where, being placed among other low Plants toward the Front of the Houſe, it makes an agreeable Variety, as it continues flowering all the Winter. But although it is commonly ſo treated; yet in moderate Winters this Plant will live in the open Air, if it is planted in a warm Situation, and on a dry Soil: and if in very hard Froſt they are cover'd either with Mats, Reeds, Straw, or Peas-haulm, they may be preſerved very well; and theſe Plants which grow in the full Ground, will thrive better, and produce a greater Number of Flowers, than thoſe which are kept in Pots: but the Soil in which theſe are planted, ſhould not be over-rich, nor too wet; for in either of theſe they will grow too vigorous in Summer; ſo will be in greater Danger of ſuffering by the Froſt in Winter: but when they grow on a gravelly Soil, or amongſt Lime-rubbiſh, their Shoots will be ſhort, ſtrong, and not ſo replete with Moiſture; ſo will better reſiſt the Cold.

This Plant very rarely produces Seeds in *England*; therefore is only propagated by Cuttings; which, if planted during any of the Summer-months, and ſhaded from the Sun, and duly watered, will be rooted in two Months; and may afterward be either planted in Pots, or into the Borders where they are deſigned to ſtand.

There is a Variety of this with variegated Leaves, which is preſerved in ſome of the Gardens where Perſons delight in theſe ſtriped-leav'd Plants. This is not ſo hardy as the plain Sort; therefore muſt be treated more tenderly in Winter; this is alſo increaſed by Cuttings in the ſame manner as the other.

The ſecond Sort is a Plant of humbler Growth than the firſt: this ſeldom riſes more than ſix Inches high, nor do the Branches grow woody, but are rather herbaceous; the Leaves of this Plant continue green through the Year, and the Flowers are of as long Duration as thoſe of the firſt Sort; which renders it valuable. This rarely produces Seeds in *England*; but is propagated by Slips, which in Summer eaſily take Root; and the Plants may be treated in the ſame manner as hath been directed for the firſt Sort.

The four other Sorts are low annual Plants. The third and ſixth Sorts are frequently cultivated in Flower-gardens, by the Title of Candy-tuft. There is of the third Sort ſometimes a Variety with white Flowers; but the Red is the moſt common; ſo that the ſixth Sort is uſually ſold by the Seedſmen for the white Candy-tuft, tho' it is evidently different from the other.

Theſe Plants were commonly ſown to make Edgings to large Borders in the Flower-gardens, and are as proper for that Purpoſe as any of the low annual Plants: but they make a much better Appearance when they are ſown in Patches, intermixed with the Dwarf Lychnis, Venus Looking-glaſs, and other low Annuals. If the Seeds of theſe are ſown in the Autumn, the Plants will grow much ſtronger, and flower earlier in the Year, than thoſe which are ſown in the Spring; but by ſowing them at different Seaſons, they will flower at ſo many different times; by which means there will be a Succeſſion of them in Flower until the Froſt puts a Stop to them.

All the Culture theſe require, is, to ſow their Seeds in the Places where they are to remain; for they do not bear removing well, unleſs it is done while the Plants are young, and taken up with Balls of Earth to their Roots: afterward, if they are kept clear from Weeds, they will thrive and flower very well. All theſe low annual Flowers are very proper Ornaments for the Borders, or vacant Spaces, between flowering Shrubs; where, by the different Sorts being blended together, they will add much to the Beauty.

IBISCUS, or MARSH-MALLOW. *Vide* Althæa.

ICACO. *Vide* Chryſobalanus.

ILEX, The ever-green Oak.

The *Characters* are;

The Leaves are, for the moſt part, indented or ſinuated (and in ſome the Edges of the Leaves are prickly), and are ever-green: it hath amentaceous Flowers, which are produced at remote Diſtances from the Fruit, on the ſame Tree: the Fruit is an Acorn, like the common Oak.

This Title of *Ilex* is, by Dr. *Linnæus*, applied to the Holly, who has placed this Genus to the *Quercus*, to which, by its Characters, it certainly belongs: but as this Title of *Ilex* is now more generally known, and applied to theſe Trees, by the *Engliſh* Gardeners, I ſhall continue it to them.

The *Species* are;

1. ILEX *folio anguſto non ſerrato. C. B. P.* The olive-leav'd ever-green Oak.

2. ILEX *folio oblongo ſerrato. C. B. P.* Narrow-leav'd ever-green Oak, with ſerrated Leaves.

3. ILEX *folio agrifolii. Bot. Monſp.* Holly-leav'd ever-green Oak.

4. ILEX *folio rotundiore molli, modiceque ſinuato, ſive Smilax Theophraſti. C. B. P.* The ever-green Oak, with round ſmooth ſinuated Leaves.

5. ILEX *aculeata cocciglandifera. C. P. B.* The Holm-oak.

There are ſeveral other Varieties of theſe Trees, which differ in the Shape of their Leaves; ſome being long and ſmooth, others are rounder, and have many Prickles upon their Edges; and ſome have their Leaves ſinuated and waved like thoſe of the Holly: but as theſe are only ſeminal Variations, and will ariſe from Seeds taken from the ſame Tree; ſo it is not worth troubling myſelf or the Reader to enumerate their ſeveral Diſtinctions in this Place; ſince thoſe above-mentioned are the moſt common Varieties; and all the other Differences will be nearly allied to one or other of the four firſt Sorts.

Theſe Trees are propagated by ſowing their Seeds: the beſt Seaſon for this Work is in the Beginning of *March:* but then, as the Acorns are ripe in Autumn, they ſhould be preſerved either in Sand, or dry Earth, until the Spring, otherwiſe they will loſe their growing Faculty;

which is commonly the Caſe with thoſe brought annually from *Genoa*, ſcarce one Seed in fifty of them ever riſing; however, ſince we have many large Trees now in *England*, which produce good Seeds, we need not ſend to *Italy* for them: but were I to adviſe, I ſhould much rather have them from *Portugal* than *Italy*; for the Voyage being much ſhorter, they are generally brought from thence in very good Condition; eſpecially if they are brought over in the Packet-boat to *Plymouth*.

The manner in which I would adviſe their being ſown is, for large Quantities, in Drills at about four Feet Diſtance; but for a ſmall Parcel, they muſt be ſown in Rows on a Bed much nearer.

The Ground on which theſe Seeds are ſown, ſhould be well dug, and cleanſed from the Roots of all noxious Weeds, *&c.* and levelled even, and the great Clods broken; then draw the Rills with an Hoe in a ſtrait Line (as is practiſed in the ſowing of Kidney-beans) about two Inches deep, laying the Acorns therein three or four Inches aſunder; then draw the Earth over them with the Head of a Rake, obſerving that none of them are left uncovered, which would entice the Vermin to attack your Acorns, eſpecially the Mice, whereby your Seminary will be greatly injured, if not wholly deſtroyed.

In the middle of *April* the young Plants will appear above-ground; you muſt then clear the Ground from Weeds, which would ſoon overſpread and deſtroy the Plants; which muſt conſtantly be obſerved, eſpecially while they are young. The firſt Year from Seed they will make but ſmall Progreſs; but afterward they will make amends by their quick Growth (eſpecially if they agree with the Soil): in *March* following you muſt gently dig up the Ground between the Rows of Plants, in order to deſtroy the Weeds, and to render it light for the Roots to ſtrike out on each Side, which will greatly promote the Growth of the Plants: but in doing of this, you ſhould be very careful not to diſturb the Roots of the Plants, which would greatly injure them: in this Place they may remain until the ſecond Spring after ſowing, when, in the Beginning of *April*, you ſhould take up the Plants where they are too cloſe, and tranſplant them where they are deſigned to remain. But as theſe Trees are ſubject to have Tap-roots, they are very difficult to be removed: you muſt therefore obſerve to take them up with a good Ball of Earth to their Roots, and carry them immediately to the Places where they are to be planted, placing them into Holes which ſhould be well prepared before; and if the Weather be dry, you ſhould pour a good Quantity of Water into the Holes about the Earth to make it like Pap; then placing the Plants therein, you ſhould fill up the Holes about their Roots, with the like pappy Earth; and then lay ſome Mulch upon the Surface of the Ground round their Roots, and give them ſome Water to ſettle the Earth to their Roots: and if the Seaſon ſhould continue dry, you muſt repeat watering them once a Week, which Water ſhould be poured all over the Heads of the Plants: but by no means give them too much, which, as I have already ſaid, deſtroys more new-planted Trees than any other Accident whatever.

But in taking up theſe Plants from the Seminary, you ſhould be careful not to injure the Roots of thoſe left remaining: nor muſt the Ground about their Roots remain long open;

but as ſoon as you have taken up thoſe that are to be tranſplanted, the whole Ground ſhould be ſlightly dug, and levelled even: the Diſtance theſe Plants ſhould be left in the Rows where they were ſown, ought to be two Feet, which will allow them room enough to grow three or four Years longer, at which time they muſt be tranſplanted (eſpecially all ſuch as are not deſigned to remain for good): but you ſhould, the two precedent Springs, dig near the Roots of thoſe which are to be removed, and cut underneath them with your Spade, to take off the Tap-roots: but you muſt obſerve not to cut them too cloſe to the Plants, leſt you deſtroy them; this will occaſion their puſhing out many Fibres, whereby the Earth will be better preſerved to their Roots when they are tranſplanted, and there will be leſs Danger of their not growing.

It has been directed by moſt People who have written on theſe Trees, to ſow the Acorns in Pots; and when the Plants have grown two or three Years therein, to ſhake them out of the Pots, preſerving all the Earth about them, and to plant them where they are to remain: which is a very good Method for ſmall Quantities; but the Trouble of this in large Plantations would be too great, eſpecially if we conſider, that theſe Plants, while in Pots, will require conſtantly to be watered in dry Weather; otherwiſe they will be ſubject to fail, or at leaſt will make but poor Progreſs. And altho' it is generally thought very hazardous to remove theſe Trees, yet I believe, if great Care be taken, firſt, to obſerve the juſt Seaſon, which is in the Beginning of *April*; ſecondly, to preſerve as much Earth to their Roots as poſſible; and, thirdly, not to keep them long above-ground; the removing of theſe Trees will not be found ſo dangerous as moſt People imagine.

And I am convinced, that Trees of ſeven or eight Years Growth are in leſs Danger of ſuffering by Tranſplantation, than thoſe that are much younger; for in the Year 1727. I removed many of theſe Trees which were five or ſix Feet high; and though they had not been ſo well managed in the Place where they were rais'd, as might be wiſhed, yet but one of the whole Number failed, notwithſtanding the Seaſon proved dry for near a Month after.

Theſe Trees are by many People greatly eſteemed for Hedges to ſurround Wilderneſs-quarters; but they are ſubject to grow too large for that Purpoſe, becauſe we ſhould never hide the Tops of the Trees in ſuch Places from the Sight; for they are, if rightly diſpoſed in the Quarters, vaſtly more agreeable to the Eye, than the fineſt ſheared Hedge in the World; but they may do well enough for a large Fence, to obſtruct the Sight, or to defend a new Plantation of tender Trees; for which Purpoſe the Acorns ſhould be ſown in the Place where the Hedge is deſigned; and when the Plants are come up, they ſhould be thinned, where they are too cloſe; and if the Ground is kept clear from Weeds, and every Spring dug about the Plants, they will ſoon form a good Hedge: but you ſhould obſerve not to let them grow too much in Height before the Lower-part of the Hedge is well ſtrengthened, which would occaſion its bending, and the Branches would be ſubject to be diſplaced with ſtrong Winds, or great Snows, and thereby become very unſightly: but if they are regularly trained up, they will make a good thick Hedge from the Ground to the Height of thirty Feet, and in leſs time than any other ever-green Tree whatever.

The Soil in which theſe Trees thrive beſt, is an hazelly Loam, not too ſtrong, nor over-light, in which they will grow to a large Size, and reſiſt the ſevereſt Cold of our Climate; and retaining their Leaves all the Winter, do afford an agreeable Proſpect in that Seaſon: but they ſhould by no means be planted near ſuch Walks, or other Parts of the Garden, as are intended to be kept clean; for in the Month of *April*, when they caſt their old Leaves, they make a great Litter, and are apt to blow about with the Wind, and become very troubleſome; and in *June*, when their Male Flowers fall off, they occaſion no leſs Trouble to clean them up daily in ſuch Places; and in the pleaſanteſt Seaſon of the Year they are the moſt unſightly Trees in a Garden, the old Leaves decaying at that Seaſon, and falling off; and the Male Flowers, which are generally in great Plenty, are then produced, which renders it not ſo valuable in Places much frequented: but for larger Plantations, at a remote Diſtance from the Habitation, ſo as to be juſt within the View, they make a very handſome Appearance, eſpecially in the Winter-ſeaſon.

The Wood of this Tree is accounted very good for many Sorts of Tools and Utenſils, as Mallet-heads, Mall-balls, Chairs, Wedges, Beetles, Pins, *&c.* as alſo for Paliſadoes; and affords the moſt durable Charcoal in the World, and is the common Fuel in the Southern Parts of *France*, and in *Italy*.

The Kermes, or Holm-oak, is of a much lower Stature than the former Sorts, and ſeldom grows to the Height of a Tree: this, tho' a Native of the warmeſt Parts of *France*, yet will endure the Cold of our Climate in the open Air. It may be propagated in the ſame manner as the former, and deſerves a Place amongſt other Shrubs of low Growth, for its Curioſity, as being the Plant upon which the Kermes are bred; the Hiſtory of which may be ſeen at large in *Garidel's Hiſtory of the Plants which grow in* Provence, it being too long to be inſerted here.

IMPERATORIA, Maſterwort.

The *Characters* are;

It is a Plant with a roſe and umbellated Flower, conſiſting of ſeveral Petals, which are ſometimes heart-ſhaped, and ſometimes intire, ranged in a Circle, and reſting on the Empalement; which afterward becomes a Fruit, compoſed of two Seeds, which are plain, almoſt oval, gently ſtreaked and bordered, and generally caſting their Cover: to theſe Marks muſt be added, That their Leaves are winged, and pretty large.

The *Species* are;

1. IMPERATORIA *major. C. B. P.* Common Maſterwort.

2. IMPERATORIA *Pyrenaica tenuifolia. Tourn.* Narrow-leav'd *Pyrenean* Maſterwort.

3. IMPERATORIA *Alpina maxima. Tourn.* Greateſt Maſterwort of the *Alps*.

The Root of the firſt Species is uſed in Medicine; it has a very hot acrid Taſte, and is eſteemed alexipharmac, ſudorific, and a great Attenuator and Opener.

This Sort is cultivated in Gardens to ſupply the Markets. It may be propagated either by Seeds, or by parting the Roots: if you would propagate it by Seeds, they ſhould be ſown in Autumn, ſoon after they are ripe, on a Bed or Border of light Earth, in a ſhady Situation; obſerving not to ſow the Seeds too thick, nor ſhould they be covered too deep. In the Spring the Plants will appear, when they ſhould be carefully weeded; and if the Seaſon ſhould prove very dry, they ſhould be now-and-then refreſhed with Water, which will greatly promote the Growth of the Plants: toward the Beginning of *May*, if you find the Plants come up too cloſe together, you ſhould prepare a moiſt ſhady Border (and thin the Plants carefully, leaving them about four Inches aſunder); and plant thoſe which you draw up, into the Border about ſix Inches apart every Way, being careful to water them duly, if the Seaſon ſhould prove dry, until they have taken Root; after which time, theſe Plants (as alſo thoſe remaining in the Seedbeds) will require no other Culture but to keep them clear from Weeds; which may be eaſily effected by hoeing the Ground between the Plants now-and-then in dry Weather, which will deſtroy the Weeds; and by ſtirring the Ground, will be of great Service to the Plants. The following Autumn theſe Plants ſhould be tranſplanted where they are deſigned to remain; which ſhould be in a rich moiſt Soil, and a ſhady Situation; where they will thrive much better, than if too much expoſed to the Sun, or in a dry Soil; for they delight in Shade and Moiſture; ſo that where theſe are wanting, the Plants will require a conſtant Supply of Water in dry Weather, otherwiſe they will thrive but ſlowly. The Diſtance which theſe Plants ſhould be placed, muſt not be leſs than twenty Inches, or two Feet every Way; for where they like their Situation, they will ſpread and increaſe very much. When theſe Plants are rooted, they will require no other Culture, but to keep them clear from Weeds; and in the Spring before they ſhoot, the Ground ſhould be every Year gently dug between the Plants; in doing of which great Care ſhould be had, not to cut or bruiſe their Roots: theſe Plants, with this Management, will continue ſeveral Years, and will produce Seeds in plenty.

If you would propagate theſe Plants by Off-ſets, their Roots ſhould be parted at *Michaelmas*, and planted in a ſhady Situation, at the ſame Diſtance as has been directed for the Seedling-plants, obſerving to water them until they have taken Root; after which time they muſt be managed as the Seedlings.

The other two Sorts are preſerved in Botanic Gardens for the ſake of Variety; but as they are not uſed in Phyſic, nor are ornamental Plants, ſo they are ſeldom allowed a Place in other Gardens. Theſe two Sorts may be propagated in the ſame manner as the former, and are both equally hardy; ſo that they may be placed in any ſhady moiſt cold Situation, where they will thrive very well.

INARCHING is a Method of Grafting, which is commonly call'd *Grafting by Approach*. This Method of Grafting is uſed, when the Stock you intend to graft on, and the Tree from which you would take the Graft, ſtand ſo near (or can be brought ſo near), that they may be joined together. The Method of performing it is as follows: Take the Branch you would inarch, and having fitted it to that Part of the Stock where you intend to join it, pare away the Rind and Wood on one Side about three Inches in Length. After the ſame manner cut the Stock or Branch in the Place where the Graft is to be united, ſo that the Rind of both may join equally together, that the Sap may meet; then cut a little Tongue upward in the Graft, and make a Notch in the Stock to admit it; ſo that when they are joined, the Tongue will prevent their ſlipping, and the Graft will more cloſely unite with the Stock. Having thus placed them exactly together, you muſt tie them with ſome Baſs, or other ſoft Tying; then cover the Place with grafting Clay, to prevent the Air from entering to dry the Wound, or the Wet from getting in to rot the Stock: you ſhould alſo fix a Stake into the Ground to which that Part of the Stock, as alſo the Graft, ſhould be faſtened, to prevent the Wind from breaking them aſunder, which is often the Caſe when this Precaution is not obſerved.

In this manner they are to remain about four Months, by which time they will be ſufficiently united; and the Graft may then be cut from the Mother tree, obſerving to ſlope it off cloſe to the Stock: and if at this time you cover the joined Parts with freſh grafting Clay, it will be of great Service to the Graft.

This Operation is always performed in *April* or *May*, that the Graft may unite with the Stock before the ſucceeding Winter; and is commonly practiſed upon Oranges, Myrtles, Jaſmines, Walnuts, Firs, Pines, and ſeveral other Trees, which will not ſucceed by common Grafting or Budding. But altho' I have mentioned Orange-trees among the reſt, yet I would by no means adviſe this Practice where the Trees are deſigned to grow large, which, in this Method, they rarely ever will do: and it is chiefly practiſed upon thoſe Trees only as a Curioſity, to have a young Plant with Fruit upon it, in a Year or two from Seed, by inarching a bearing Branch into a young Stock, whereby it is effected: yet theſe Plants are ſeldom long-liv'd.

INDIGO. *Vide* Anil.

INGA.

This is the *American* Name of the Plant; for which we have no *Engliſh* Name at preſent.

The *Characters* are;

It hath a funnel-ſhaped Flower, conſiſting of one Leaf, whoſe Tube is furbelowed: from the Flower-cup ariſes the Pointal, fixed like a Nail in the Hinder-part of the Flower, which afterward becomes a ſoft fleſhy Pod; in which are contained many irregular Seeds incloſed in a ſweet Pulp.

We know but one *Species* of this Plant; *viz.*

INGA *flore albo fimbriato, fructu dulci. Plum. Nov. Gen.* Inga with a white furbelowed Flower, and a ſweet Fruit.

This Tree is very common on the North Side of the Iſland of *Jamaica*, at *La Vera Cruz*, and in ſeveral other Parts of the *Spaniſh Weſt-Indies*; where it riſes to the Height of ſixteen or twenty Feet, and ſends forth many crooked ſtraggling Branches, which hang downward, and are covered with a whitiſh Bark. The Flowers come out at the Ends of the Branches, which are ſucceeded by the Pods, which are ſometimes eaten by the Negroes.

In *Europe* this Plant is preſerved by thoſe Perſons who are curious in Exotic Plants: it is propagated by Seeds, which ſhould be ſown early in the Spring, in Pots filled with light rich Earth, and plunged into an Hot-bed of Tanners Bark. When the Plants are come up two Inches high, they ſhould be carefully tranſplanted into ſeparate Pots filled with light rich Earth, and then plunged into the Hot-bed again, being careful to ſhade them from the Sun, until they have taken new Root; after which time they muſt be plentifully watered; and in hot Weather the Glaſſes of the Hot-bed ſhould be raiſed every Day, to admit freſh Air to the Plants, to prevent their being drawn up too weak. At *Michaelmas* theſe Plants muſt be removed into the Stove, and plunged into the Tan in the warmeſt Part of the Bed. During the Winter-ſeaſon theſe Plants muſt be kept very warm, and they muſt be frequently refreſhed with Water; but it muſt not be given to them in too large Quantities in cold Weather: in the Summer they muſt be plentifully watered; and in hot Weather they ſhould have a large Share of freſh Air, by opening of the Glaſſes of the Stove; but they muſt not be removed out of the Stove; for they are too tender to endure the open Air of this Country, in the warmeſt Part of the Year. When the Plants have filled the Pots with their Roots, they ſhould be tranſplanted into larger, and their Roots ſhould be then carefully trimmed. With this Management the Plants will thrive, and in a few Years produce Flowers; ſo will add to the Variety amongſt other tender Exotic Plants.

INOCULATING, or Budding. This is commonly practiſed upon all Sorts of Stone-fruit; in particular, ſuch as Peaches, Nectarines, Cherries, Plums, &c. as alſo upon Oranges and Jaſmines; and is preferable to any Sort of Grafting for moſt Sorts of Fruit. The Method of performing it is as follows: You muſt be provided with a ſharp Penknife, having a flat Haft (the Uſe of which is to raiſe the Bark of the Stock, to admit the Bud), and ſome ſound Baſs-mat, which ſhould be ſoaked in Water, to increaſe its Strength, and make it more pliable; then having taken off the Cuttings from the Trees you would propagate, you ſhould chooſe a ſmooth Part of the Stock about five or ſix Inches above the Surface of the Ground, if deſigned for Dwarfs; but if for Standards, they ſhould be budded ſix Feet above-ground: then with your Knife make an horizontal Cut croſs the Rind of the Stock, and from the Middle of that Cut make a Slit downward about two Inches in Length, ſo that it may be in the Form of a T: but you muſt be careful not to cut too deep, leſt you wound the Stock: then having cut off the Leaf from the Bud, leaving the Footſtalk remaining, you ſhould make a croſs Cut about half an Inch below the Eye, and with your Knife ſlit off the Bud, with Part of the Wood to it, in form of an Eſcutcheon: this done, you muſt with your Knife pull off that Part of the Wood which was taken with the Bud, obſerving whether the Eye of the Bud be left to it, or not (for all thoſe Buds which loſe their Eyes in ſtripping, ſhould be thrown away, being good for nothing): then having gently raiſed the Bark of the Stock with the flat Haft of your Penknife clear to the Wood, you ſhould thruſt the Bud therein, obſerving to place it ſmooth between the Rind and the Wood of the Stock, cutting off any Part of the Rind belonging to the Bud, which may be too long for the Slit made in the Stock; and ſo having exactly fitted the Bud to the Stock, you muſt tie them cloſely round with Baſs-mat, beginning at the Underpart of the Slit, and ſo proceed to the Top, taking care that you do not bind round the Eye of the Bud, which ſhould be left open.

When your Buds have been inoculated three Weeks, or a Month, you will ſee which of them have taken; thoſe of them which appear ſhrivelled and black, being dead; but thoſe which remain freſh and plump, you may depend, are joined: and at this time you ſhould looſen the Bandage; which, if not done in time, will pinch the Stock, and greatly injure, if not deſtroy, the Bud.

The *March* following you muſt cut off the Stock about three Inches above the Bud, ſloping it, that the Wet may paſs off, and not enter the Stock: to this Part of the Stock left above the Bud, it is very proper to faſten the Shoot which proceeds from the Bud, and would be in Danger of being blown out, if not prevented: but this muſt continue on no longer than one Year; after which it muſt be cut off cloſe above the Bud, that the Stock may be covered thereby.

The time for Inoculating is, from the middle of *June* until the middle of *Auguſt*, according to the Forwardneſs of the Seaſon, and the particular Sorts of Trees; which may be eaſily known, by trying the Buds whether they will come off well from the Wood. But the moſt general Rule is, when you obſerve the Buds formed at the Extremity of the ſame Year's Shoots, which is a Sign of their having finiſhed their Spring Growth.

The firſt Sort commonly inoculated is the Apricot; and the laſt the Orange-tree, which ſhould never be done until the middle of *Auguſt*. And in doing this Work, you ſhould make choice of cloudy Weather; for if it be done in the middle of the Day, in very hot Weather, the Shoots will perſpire ſo faſt, as to leave the Buds deſtitute of Moiſture. Nor ſhould you take off the Cuttings from the Trees long before they are uſed: but if you are obliged to fetch your Cuttings from ſome Diſtance, as it often happens, you ſhould then be provided with a tin Inſtrument, having a Socket about ten Inches long, and a Cover to the Top, which muſt have five or ſix Holes; in this Socket you ſhould put as much Water as will fill it about two or three Inches high, and place your Cuttings therein in an upright Poſition, ſo that that Part which was cut from the Tree may be ſet in the Water, and ſo faſten down the Cover to keep out the Air; and the Holes in the Cover will be ſufficient to let the Perſpiration of theſe Branches paſs off; which, if pent in, would be very hurtful to them: and you muſt be careful to carry it upright, that the Water may not reach to the Buds; for it is a very wrong Practice in thoſe who throw their Cuttings all over in Water, which ſo ſaturates the Buds with Moiſture, that they have no attractive Force left to imbibe the Sap of the Stock, whereby they very often miſcarry.

But before I quit this Head, I beg Leave to obſerve, that tho' it is a Practice to diveſt the Bud of that Part of the Wood which was taken from the Shoot with it; yet, in many Sorts of tender Trees, it is beſt to preſerve a little Wood to the Bud, without which they often miſcarry. The not obſerving this, has occaſioned ſome People to imagine, that ſome Sorts of Trees are not to be propagated by Inoculation; whereas, if they had perform'd it in this Method, they might have ſucceeded, as I have ſeveral times experienced.

INTYBUS. *Vide* Endivia.

JOHNSONIA.

The Title of this Genus was given by the late Dr. *Thomas Dale*, of *Carolina*, in Memory of Dr. *John-*

ſon, who publiſhed an Edition of *Gerrard's Herbal*, improved and corrected.

The *Characters* are;

The Empalement of the Flower conſiſts of one Leaf, which is cut at the Brim into four ſharp Portions: the Flowers are monopetalous and tubulous, being divided into four Segments at the Brim: in the Centre of the Flower is ſituated the Pointal, attended by four Stamina, *which ſupport yellow oblong Summits: the Pointal afterward changes to a round ſucculent Fruit, having one Cell, incloſing many ſmall Seeds.*

We have but one *Species* of this Genus at preſent; *viz.*

Johnsonia *floribus verticillatis ſeſſilibus, foliis ovato-lanceolatis oppoſitis, caule fruticoſo. Dale.* Shrubby Johnſonia, with oval ſpear ſhaped Leaves growing oppoſite, and the Flowers growing in Whorles cloſe to the Branches.

This is figur'd in Mr. *Cateſby's Hiſtory of Carolina*, Vol. II. p. 47. by the Title of *Frutex baccifer verticillatus, foliis ſcabris latis dentatis & conjugatis, baccis purpureis denſe congeſtis.* It grows plentifully in the Woods near *Charles-Town* in *South-Carolina*; and the Leaves of the Shrub were often uſed by Dr. *Dale*, in the Cure of Dropſies. A particular Account of the Virtues of this, and many other Plants growing in the ſame Country, was written by the Doctor, and ſent directed for me, during the time of the late War; but the Ship being taken, the Papers were loſt; and, the Doctor dying ſoon after, I could not procure another Copy of them.

This Shrub riſes from four to ſix Feet high, having many ſlender Branches coming out from the Ground upwards, ſo as to form a Thicket, where the Plants are in plenty. Theſe Branches are covered with a woolly Subſtance, and are garniſhed with oval Leaves, placed oppoſite by Pairs, having pretty long Footſtalks. The Leaves are narrow at their Baſe, but extend to the Breadth of three Inches, and terminate in a Point, being a little indented on their Edges: they have a rough Surface, and are a little inclining to be mealy, like the Leaves of Viburnum. At each Joint of the Branches, where the Leaves are ſet on, the Flowers are produced in Whorles, cloſely adhering to the Branches, which are ſmall, and of a purple Colour. Theſe are ſucceeded by ſoft ſucculent Berries, of a bright red Colour, which change to a deep Purple as they decay: in each of theſe are many ſmall Seeds.

The Seeds of this Shrub were ſent to *England* by Mr. *Cateſby* in 1724. and many of the Plants were raiſed in the Gardens near *London*, which were planted, when grown to have Strength, in the open Air, where they ſucceeded very well, and ſome of them produced their Flowers for ſeveral Years; but there was not any of their Fruit ſucceeded the Flowers in *England*. The Plants having ſucceeded ſo well in the open Air for ſome Years, occaſioned their being in general planted abroad, and the ſevere Froſt in the Year 1739. deſtroyed them all; ſo that until Dr. *Dale* ſent a freſh Supply of Seeds in the Year 1744. there were none of the Plants left in the *Engliſh* Gardens.

The Plants ariſe very eaſily from the Seeds, if they are ſown upon a a moderate Hot-bed; but during the two or three firſt Years, they are tender; ſo that if they are not protected from the Froſt, they are frequently killed to the Ground in Winter; but when they have acquired Strength, they will reſiſt the Cold of our ordinary Winters, provided they are planted in a ſhelter'd Situation; but as they are liable to be killed by ſevere Froſt, it will be proper to have ſome Plants ſhelter'd to preſerve the Kind. When the Plants are kept in a Green-houſe, they generally retain their Leaves till the Spring; but thoſe which are expoſed to the open Air, always ſhed their Leaves in Autumn. As theſe Plants do not produce Seeds in this Country, the only Method of propagating them is by Layers, which ſhould be laid in the Autumn; and if they are duly ſupplied with Water the following Summer, they will have made good Roots by *Michaelmas*; and they may be then taken off, and tranſplanted, either into Pots to be ſheltered in Winter, or in Borders where they are deſign'd to remain; but theſe ſhould have Mulch laid about their Roots in Winter, to preſerve them from the Froſt. The Plants which are thus propagated, will be hardier than thoſe which are raiſed from Seeds, ſo may be better inured to our Climate; and as this Plant grows in *Virginia*, the Seeds brought from thence will be better adapted to this Country, than thoſe which are brought from *South-Carolina*.

JONQUIL. *Vide* Narciſſus.

IRIS, Flower-de-luce.

The *Characters* are;

It hath an oblong fleſhy creeping Root: the Flower conſiſts of ſix Leaves, three of which are bifid, and ſtand erect; the other three are reflexed: upon the Under-part of the arched Leaves is placed a Congeries of Hairs reſembling a Beard: from the very Bottom ariſe the Male Stamina, *carefully defended by an hollow Caſe of Petals: the Flower grows to the* Apex *of the Ovary, which ſends forth theſe Beards and caſe-like Tubes; and hence it appears like a nine-leav'd Flower.*

The *Species* are;

1. Iris *purpurea, ſive vulgaris. Park. Par.* Common purple Flower-de-luce.

2. Iris *hortenſis pallide cærulea. C. B.* Pale-blue Garden Flower-de-luce.

3. Iris *hortenſis alba Germanica. C. B.* White Garden *German* Flower-de-luce.

4. Iris *alba Florentina. C. B.* White *Florentine* Flower-de-luce.

5. Iris *Dalmatica major. C. B.* Greater Flower-de-luce of *Dalmatia*.

6. Iris *Suſiana, flore maximo ex albo nigricante. C. B.* The *Chalcedonian* Iris, with a large black-and-white Flower.

7. Iris *latifolia Pannonica, colore multiplici. C. B.* Broad-leav'd *Hungarian* Flower-de-luce, with a many-colour'd Flower.

8. Iris *Illyrica, flore majore. Tourn.* Flower-de-luce of *Illyricum*, with a large Flower.

9. Iris *ſativa lutea. C. B. P.* Yellow Garden Flower-de-luce.

10. Iris *lutea variegata. Cluſ.* Yellow variegated Flower-de-luce.

11. Iris *latifolia candida, purpureis venis diſtincta. C. B.* Broad-leav'd Flower-de-luce, with a white Flower ſtriped with purple.

12. Iris *humilis minor, flore purpureo. Tourn.* Dwarf purple Flower-de-luce.

13. Iris *anguſtifolia maritima major. C. B.* Greater narrow-leav'd Sea Flower-de-luce.

14. Iris *anguſtifolia maritima minor. C. B.* Leſſer narrow-leav'd Sea Flower-de-luce.

15. Iris *anguſtifolia minor Pannonica, ſive verſicolor. Cluſ.* Small variable narrow-leav'd Flower-de-luce of *Hungary*.

16. Iris *humilis minor anguſtifolia, flore variegato.* Dwarf narrow-leav'd Flower-de-luce, with a variegated Flower.

17. Iris *ſylveſtris, quam Xyrim vocant. Plin. Raii Syn.* Stinking Gladdon, or Gladwyn.

18. Iris *hortenſis latifolia. C. B. P.* Broad-leav'd Garden Flower-de-luce.

19. Iris *latifolia minor alba, oris cæruleis. Swert.* Small broad-leav'd Flower-de-luce, with white Flowers, having blue Borders.

20. Iris *latifolia minor alba, oris dilute purpureis. H. R. Par.* Leſſer broad-leav'd Flower-de-luce, with white Flowers, having pale-purple Borders.

21. Iris *Aſiatica cærulea polyanthos. C. B. P.* Many-flower'd blue *Aſiatic* Flower-de-luce.

22. Iris *Aſiatica purpurea. C. B. P.* Purple *Aſiatic* Flower-de-luce.

23. Iris *peregrina ſubrubens inodora. C. B. P.* Rediſh foreign Flower-de-luce, without Smell.

24. Iris *peregrina, odore oxyacanthæ. C. B. P.* Foreign Flower-de-luce, ſmelling like Hawthorn.

25. Iris *Byzantina purpuro-cærulea. C. B. P.* Purple-blue Flower-de-luce of *Conſtantinople.*

26. Iris *Damaſcena polyanthos. C. B. P.* Many-flower'd Flower-de-luce of *Damaſcus.*

27. Iris *latifolia Germanica, odore ſuavi. C. B. P.* Broad-leav'd *German* Flower-de-luce, with a ſweet Smell.

28. Iris *latifolia Germanica, odore ſambuci. C. B. P.* Broad-leav'd *German* Flower-de-luce, ſmelling like Elder.

29. Iris *latifolia Germanica ochroleucos. C. B. P.* Broad-leav'd *German* Flower-de-luce, with a yellowiſh white Flower.

30. Iris *latifolia Germanica candido-purpurea. C. B. P.* Broad-leav'd whitiſh-purple *German* Flower-de-luce.

31. Iris *latifolia alba viridis. C. B. P.* White and green broad-leav'd Flower-de-luce.

32. Iris *latifolia candida, caule aphyllo. C. B. P.* Broad-leav'd white Flower-de-luce, with a naked Stalk.

33. Iris *latifolia Belgica variegata. C. B. P.* Broad-leav'd variegated *Dutch* Flower-de-luce.

34. Iris *Belgica cærulea verſicolor. C. B. P.* Blue variegated *Dutch* Flower-de-luce.

35. Iris *latifolia humilior purpurea. C. B. P.* Broad-leav'd dwarf purple Flower-de-luce.

36. Iris *latifolia humilior verſicolor. C. B. P.* Broad-leav'd dwarf variegated Flower-de-luce.

37. Iris *Dalmatica minor. Cluſ. Hiſp.* Small Flower-de-luce of *Dalmatia.*

38. Iris *paluſtris lutea. Tabern. Icon.* Yellow marſh Flower-de-luce.

39. Iris *paluſtris pallida. Raii Syn.* Pale water Flower-de-luce.

40. Iris *pratenſis anguſtifolia humilior. C. B. P.* Lower narrow-leav'd meadow Flower-de-luce.

41. Iris *anguſtifolia candida, lineis rubentibus notata. C. B. P.* White narrow-leav'd Flower-de-luce, ſtriped with rediſh Lines.

42. Iris *anguſtifolia, prunum redolens, minor. C. B. P.* Smaller narrow-leav'd Flower-de-luce, ſmelling like Plums.

43. Iris *humilis candicans, venis & ora cæruleis. Tourn.* Low whitiſh Flower-de-luce, with blue Veins and Borders.

44. Iris *humilis Pyrenaica, foliis repandis è luteo vireſcentibus. Tourn.* Low *Pyrenean* Flower-de-luce, whoſe bending Leaves are of a greeniſh-yellow Colour.

45. Iris *humilis, flore rubello. Tourn.*

Tourn. Dwarf Flower-de-luce, with a rediſh Flower.

46. Iris *humilis, flore pallido & albo. Tourn.* Dwarf Flower-de-luce, with a pale and white Flower.

47. Iris *humilis, flore luteo. Tourn.* Dwarf yellow Flower-de-luce.

48. Iris *humilis, flore pallide luteo. Tourn.* Dwarf Flower-de-luce, with a pale-yellow Flower.

49. Iris *humilis ſaxatilis Gallica. Tourn.* Dwarf Rock Flower-de-luce of *France.*

50. Iris *humilis latifolia major acaulis. Tourn.* Greater broad-leav'd dwarf Flower-de-luce, without a Stalk.

51. Iris *Americana verſicolor, ſtylo non crenato. Hort. Elth.* Party-coloured *American* Flower-de-luce, whoſe Style is not crenated.

52. Iris *Americana verſicolor, ſtylo crenato. Hort. Elth.* Party-coloured *American* Flower-de-luce, with an indented Style.

53. Iris *Virginiana pumila, ſive Chamæiris verna anguſtifolia, flore purpuro-cæruleo odorato. Baniſt.* Dwarf narrow-leav'd Spring Flower-de-luce of *Virginia*, with a purple-blue ſweet-ſmelling Flower.

54. Iris *Virginiana pumila, ſive Chamæiris verna odoratiſſima latifolia cærulea repens. Baniſt.* The moſt ſweet ſcented dwarf Spring Flower-de-luce of *Virginia*, with broad Leaves, and a blue Flower.

Moſt of theſe Sorts have been introduced into curious Gardens, from *Germany, Spain,* and the *Levant*, which are the Countries of their natural Growth. All theſe are hardy Plants, which will thrive in the open Air in this Climate, and require very little Care to cultivate them: but as they afford a great Variety, and continue long in Flower (eſpecially in a ſhady Situation), they merit a Place in every large Garden. Theſe Sorts uſually grow from two to four Feet high, in a good Soil; therefore ſhould be plac'd amongſt hardy Flowers of the ſame Growth.

The twelfth, thirty-fifth, thirty-ſixth, and thirty-ſeventh Sorts are of lower Growth than either of the former; theſe ſeldom riſe above a Foot high, but have Leaves as broad as thoſe before-mentioned; but not ſpreading ſo faſt by their Roots, do not require ſo much room. Theſe Sorts flower earlier in the Spring, than the tall-growing Kinds; therefore, if ſome of theſe Roots are planted in a warm Situation, their Flowers will appear in *March*; and thoſe which have an Eaſt Expoſure, will ſucceed theſe; ſo that ſome of them may be continued near two Months in Beauty.

The ſeventeenth, thirty-eighth, and thirty-ninth Sorts grow wild in marſhy Places in ſeveral Parts of *England*; but the thirty-eighth is much more common than the others, which is found in ſtanding Waters and Ditches almoſt every-where. The Roots of this Sort are uſed in Medicine, under the Title of *Acorus adulterinus*, or *falſe Acorus*. Theſe two Sorts, being very common, are ſeldom admitted into Gardens; but where there happens a Bog, or any low moiſt Place, in a Garden, ſome of them may be planted for Variety-ſake.

The fortieth Sort grows wild in moiſt Meadows in *France* and *Germany*; but is not a Native of this Country. This Sort has narrow Leaves, and is a much leſs Plant than either of the former; therefore may be allowed a Place in ſhady moiſt Borders for the ſake of Variety, being a very hardy Plant, and requiring very little Care to cultivate.

The thirteenth, fourteenth, fifteenth,

teenth, ſixteenth, forty-firſt, forty-ſecond, forty-third, forty-fourth, forty-fifth, forty-ſixth, forty-ſeventh, forty-eighth, forty-ninth, and fiftieth Sorts are alſo of humble Growth, ſeldom riſing above eighteen Inches high; theſe have likewiſe narrow Leaves, and do not ſpread ſo much as thoſe Sorts before-mentioned; therefore may be allowed Places in ſmaller Gardens, becauſe there is a great Variety in their Flowers. They ſhould be planted in an Eaſt Border, where the Soil is rather moiſt than dry; in which Poſition they will thrive, and produce a great Number of Flowers. The Places of their natural Growth are mentioned to their different Names; from whence their Seeds or Roots may be procured.

The fifty-firſt, fifty-ſecond, fifty-third, and fifty-fourth Sorts are Natives of *America*; from whence their Seeds and Roots have been ſent into *England:* the fifty-firſt and fifty-ſecond Sorts were ſent from *Maryland*, where their Roots are uſed in venereal Caſes. Theſe flower late in the Summer, after all the other Sorts are paſt: therefore ſhould be admitted into every curious Garden; for they are as hardy, and require as little Care in cultivating, as any of the before-mentioned Kinds.

All theſe Sorts of Flower-de-luce may be propagated by parting their Roots: the beſt Seaſon for performing this is at *Michaelmas*, that they may be well rooted before the Froſt begins; for if it be delayed till Spring, the Plants will require to be frequently watered, if the Seaſon ſhould prove dry; and they will not flower near ſo ſtrong, as thoſe which were well rooted before Winter. The dwarf and narrow-leav'd Kinds may be removed and parted every ſecond or third Year; becauſe as theſe do not ſpread ſo faſt as the larger Kinds, they may be eaſily kept within Compaſs, without being often tranſplanted. But all the larger Sorts ſhould be either removed and parted every Year, or dug about, and reduced; otherwiſe they will ſpread ſo much as to injure ſuch Plants as grow near them: indeed in thoſe Places where they are planted under Trees in large Wood-work, and are allowed room enough, they may be permitted to grow many Years unremoved.

The greateſt Part of theſe Plants grow too large for ſmall Flower-gardens; and their Leaves generally harbour great Quantities of Snails, and other Vermin, which come forth in the Night, and deſtroy whatever curious Plants grow near them: for which Reaſons they are generally baniſh'd from very curious Gardens, and are proper only for large Gardens, or to plant in Wilderneſs-quarters, where, if the Trees are not too cloſe, they will thrive and flower extremely well, eſpecially if the Ground about them be annually dug: and the Flowers being proper Ornaments in Baſons, for Halls, Chimneys, *&c.* in the Summer-ſeaſon, they may be allowed a Place in ſome remote Part of the Garden, where few other things will thrive.

The 1ſt, 4th, and 7th Sorts are uſed in Medicine; for which Purpoſe they may be eaſily propagated in the manner above directed; obſerving to plant the fourth Sort in a warmer Soil than the others; and the ſeventeenth into a moiſt ſhady Situation, where it will thrive exceedingly.

The 6th, 15th, and 16th Sorts are not ſo ſubject to ſpread as the others; and, for their Beauty, may be admitted into every curious Garden: theſe ſhould be planted under a Wall or Pale where they may have the morning Sun; but muſt not be expoſed to the great Heat of the mid-day Sun, which would ſoon deſtroy them: they delight moſt in a freſh light loamy undung'd Soil, and to be pretty moiſt.

The ſixth Sort is the moſt beautiful and rare of all the Kinds: the Flowers of this Sort are very large, and finely variegated with black and white; ſo by ſome it is called, the Second mourning Iris.

All theſe Sorts may alſo be propagated by Seeds, which they generally produce in great Plenty; which ſhould be ſaved from ſuch as have variegated Flowers, thoſe being moſt likely to produce the greateſt Variety.

The Seeds ſhould be ſown either in Caſes of Earth, or upon an Eaſt Border, ſoon after they are ripe, which will come up the ſucceeding Spring; but if the Seeds are kept till that time before they are ſown, they will not come up until the ſecond Year, and ſometimes will not grow. The young Plants ſhould be conſtantly kept clean from Weeds, and in dry Weather ſhould be watered, which will greatly promote their Growth; and the *Michaelmas* following they ſhould be tranſplanted into an Eaſt Border, at about eight or ten Inches Diſtance, where they may continue until they flower, which, in the ſmall Sorts, will be the ſucceeding Spring; but the large Sorts will not flower till the third Year from ſowing, when you may mark all ſuch as produce valuable Flowers, which at *Michaelmas* may be tranſplanted into the Garden: but thoſe which are of little Beauty may be pulled up in Flower, and thrown away, to give the better Sorts more room.

IRIS BULBOSA.
IRIS PERSICA. } *Vide* Xiphium.

ISATIS, Woad.

The *Characters* are;

The Flower conſiſts of four Leaves, which are diſpoſed in form of a Croſs; out of whoſe Flower-cup riſes the Pointal, which afterward turns to a Fruit in the Shape of a Tongue, flat at the Edge, gaping two Ways, having but one Cell; in which is contained, for the moſt part, one oblong Seed.

The *Species* are;

1. ISATIS *ſativa, ſive latifolia. C. B.* Broad-leav'd manured Woad.

2. ISATIS *ſylveſtris, vel anguſtifolia. C. B.* Narrow-leav'd wild Woad.

3. ISATIS *Dalmatica major. Bobart.* Greater *Dalmatian* Woad.

There are ſome other Varieties of this Plant, which are preſerv'd in ſome curious Botanic Gardens: but as they are Plants of little Uſe or Beauty, I ſhall omit mentioning them here.

The firſt Sort is that which is cultivated in *England*, for the Uſe of Dyers; who uſe it for laying the Foundation of many Colours, eſpecially all Sad-colours.

It is a very rich Commodity, and well worth the propagating; which is done by Seed.

The Soil that it requires, is one that is dry and warm: it will not be amiſs if it be a little gravelly or ſandy; and it ſhould have reſted long, to be in good Heart: and the richeſt Garden-ground near great Towns is the beſt; tho' it will do well in many other Places.

Woad is commonly ſown upon a Lay, which they plow into high Ridges, except the Land be very dry; and they harrow the Turf till they break it to Pieces, and pick out all the Graſs, Weeds, and Lumps of Earth, and fling them into the Furrows to rot.

The Land for this Seed ought to be finely plow'd and harrow'd, and all the Clods and Turfs broken, and the Stones pick'd up, and carry'd off.

The beſt time for ſowing it is the Latter-end of *July*, ſoon after the Seed is ripe; which will come up in *Auguſt*, and muſt be hoed out, as is practis'd for Turneps, leaving the Plants ten or twelve Inches aſunder; by which means they will grow ſtrong, and produce much larger Leaves; and beſides, that ſown at this Seaſon doth ſeldom miſcarry; whereas that which is ſown in the Spring will be very liable thereto; and if it doth not, the Plant will not have half the Strength the firſt Summer.

It ought to be kept conſtantly weeded; but if it come up good, it will need the leſs weeding: the ordinary Price of Weeding is eight Shillings *per* Acre.

Some recommend the ſowing of it about the Beginning of *February*; for which they give this Reaſon, that whereas it is apt to be ſpoil'd by the Fly and Grub, it eſcapes the better, being early ſown; and if they do kill any of it, they have the better Opportunity of ſowing more.

They do this by making Holes with a Stick about ſeven or eight Inches aſunder, and put five or ſix Seeds into each Hole.

They ſeldom or never ſow it more than two Years upon the ſame Piece of Land; becauſe, if it be long continued, it robs the Soil: but if it be moderately uſed, it prepares Land for Corn; and where the Soil is rank, it abates the too great Fertility of it.

It is ripe when the Leaf is come to its full Growth, and retains its perfect Colour, and lively Greenneſs; which is ſometimes ſooner, and ſometimes later, as the Year proves dry or moiſt.

As ſoon as it is fit to cut, it ſhould be done with all the Speed that poſſibly may be, that it may not fade, or grow pale; and when it is cut, it ought to be immediately carry'd to the Mill. The manner of doing which, and the way of ordering it, is beſt learn'd from experienc'd Workmen, and is not to be truſted to a verbal Deſcription of it.

In plowing it up, and ſowing it again, they pick up all the old Roots as they harrow it, except what they deſign for Seed, which they let ſtand to the next Year: it many times produces fifty Quarters upon an Acre.

They always keep a good Quantity of Seed by them, to plant the Ground that fails: the Seed of two Years old will ſometimes grow; but as it is apt to fail, it is better to ſow that of the firſt. And if they ſow or plant it late, if the Ground be dry and hard, they ſteep it in Water the Day before they ſow it, which cauſes it to come up the ſooner.

Good Woad may yield five or ſix Crops in a plentiful Year; though it ordinarily yields but four, ſometimes but three; eſpecially if it be let ſtand to grow for Seed: but what grows in Winter they do not uſe, though it is very good for Sheep. The two firſt Crops are the beſt, which are uſually mix'd in the ſeaſoning. The latter Crops are much the worſe; which, if mixed with either of the former Crops, ſpoil the Whole.

It many times ſells from ſix Pounds to thirty Pounds a Ton, an Acre common yielding about a Ton.

ISORA, The Screw-tree.

The *Characters* are;

It hath a ſpreading anomalous Flower, conſiſting of one or many Leaves, divided into ſeveral Parts, and appearing like two Lips; from the Bottom of the Flower ariſes the Pointal, whoſe Apex *afterward becomes a twiſted Fruit, conſiſting of many Cells, which are intorted like a Screw: in which are contained ſeveral almoſt kidney-ſhaped Seeds.*

The *Species* are;

1. ISORA *althææ foliis, fructu breviori & craſſiori. Plum. Nov. Gen.* The Screw-tree with Marſh-mallow-leaves, and a ſhorter and thicker Fruit.

2. ISORA *althææ foliis, fructu longiori & anguſtiori. Plum. Nov. Gen.* The Screw-tree with Marſh-mallow-leaves, and a longer and ſlenderer Fruit.

3. ISORA *althææ folio ampliſſimo, fructu craſſiſſimo & villoſo. Houſt.* The Screw-tree with very large Marſh-mallow-leaves, and a very thick hairy Fruit.

Theſe Plants are Natives of the *Eaſt* and *Weſt-Indies*, where they grow to the Height of ten or twelve Feet, and become ſhrubby. The firſt of theſe Sorts I received from the *Bahama Iſlands*, where it grows in great Plenty; as alſo in ſeveral other Places in the warm Parts of *America*. The ſecond Sort was found by Mr. *Robert Millar*, Surgeon, at *Carthagena* in the *Spaniſh Weſt-Indies*, from whence he ſent the Seeds to *England*; from which there have been ſeveral Plants raiſed. The third Sort was diſcovered by Dr. *William Houſtoun* in *Jamaica*, who ſent the Seeds and dried Samples of this Kind to *England*.

All theſe Plants are propagated by Seeds, which ſhould be ſown in Pots filled with light rich Earth, and then plunged into a moderate Hot-bed of Tanners Bark. When the Plants begin to appear, they ſhould be gently refreſhed with Water; and when they are grown about three Inches high, they ſhould be carefully tranſplanted, each into a ſeparate ſmall Pot filled with light rich Earth, and then plunged into the Hot-bed again; obſerving to ſhade them until they have taken new Root. During the Summer-ſeaſon theſe Plants may remain in the Hot-bed (provided they are not ſo high as to touch the Glaſſes); but at *Michaelmas* they ſhould be removed into the Stove, and plunged into the Bark-bed. During the Winter they ſhould be kept very warm, and they muſt be often watered; and if their Leaves contract Filth, they ſhould be waſhed with a Sponge; otherwiſe Inſects will attack them, which will weaken and deſtroy the Plants.

Theſe Plants are too tender to thrive in the open Air in this Climate, if they are expoſed thereto, even in the warmeſt Seaſon; ſo that they ſhould conſtantly remain in the Stove; obſerving in very hot Weather to open the Glaſſes of the Stove to admit freſh Air to the Plants, and to give them plenty of Water; as alſo to ſhift them into larger Pots as they increaſe in Magnitude. With this Management the Plants will thrive very well, and in two Years from Seeds, will produce their Flowers and Fruit.

The Name *Iſora*, which Father *Plumier* has given to this Genus, is the *Indian* Name for the Plant; but by the *Engliſh* Inhabitants of *America* it is called *Screw-tree*, from the Form of the Fruit, which is twiſted like a Screw.

ITEA, *Flor. Virg.*

The *Characters* are:

The Empalement of the Flower is of

one Leaf, and is cut into five Parts: the Flower is alſo divided into five Parts to the Bottom: in the Centre of the Flower is ſituated the Pointal, attended by five Stamina: *the Pointal afterward changes to an oval Seed-veſſel, having one Cell, which is full of ſmall Seeds.*

We have but one *Species* of this Plant;

ITEA *humilis, foliis lanceolatis, floribus ſpicatis albis.* Dwarf Itea, with ſpear-ſhaped Leaves, and white Flowers growing in a Spike.

We have no *Engliſh* Name for this Shrub; the *Latin* Name was applied to it by Dr. *Gronovius* in his *Flora Virginica.*

This Shrub grows in moiſt Soils in ſeveral Parts of *North America,* where it riſes to the Height of four or five Feet, ſending out many Branches on every Side, from the Ground upward. At the Extremity of the ſame Year's Shoots, in the Month of *July,* are produced fine Spikes of white Flowers, ſomewhat reſembling thoſe of the *Corniſh* Cherry; and when theſe Shrubs are in Vigour, they will be intirely covered with theſe Spikes of Flowers; ſo that they make a fine Appearance at their Seaſon of flowering.

At preſent this Shrub is very rare in *England:* the only Garden where I have ſeen it in Vigour, is that of his Grace the Duke of *Argyll* at *Whitton,* near *Hounſlow;* where the Soil agrees ſo well with this Plant, as that it thrives and flowers as well as in its native Country.

This Shrub will live in the open Air in *England,* the Cold never injuring it; but it will not thrive upon dry gravelly Ground, being very apt to die in ſuch Places in the Summer-ſeaſon. It is propagated by Layers; but as theſe are commonly two Years before they take Root, it cannot be propagated in ſuch Plenty as were to be wiſhed: for as this Shrub flowers at a Seaſon when there are few others in Beauty, it is the more valuable.

JUDAICA ARBOR. Vide *Cereis.*

JUGLANS, The Walnut.

The *Characters* are;

It hath Male Flowers or Katkins, which are produced at remote Diſtances from the Fruit on the ſame Tree: the Female Flowers grow two or three together, cloſe to the Branches: theſe are divided into four acute Segments: the Pointal is ſituated in the Bottom of the Empalement, which turns to a large Nut covered with a thick green Coat: the Nut is deeply furrowed, and divided in the middle, containing a Kernel having four Lobes, which is covered with a thin Skin.

The *Species* are;

1. JUGLANS *fructu maximo. C. B. P.* The largeſt Walnut.

2. JUGLANS *fructu tenero, & fragili putamine. C. B. P.* The thin-ſhelled Walnut.

3. JUGLANS *fructu perduro. Inſt. R. H.* The hard-ſhelled Walnut, by ſome called the *French* Walnut.

4. JUGLANS *fructu ſerotino. Inſt. R. H.* Late-ripe Walnut.

5. JUGLANS *nigra, fructu rotundo profundiſſime inſculpto. Clay. Flor. Virg.* The black *Virginia* Walnut.

6. JUGLANS *nigra, fructu oblongo profundiſſime inſculpto. Virginia* black Walnut, with long Fruit.

7. JUGLANS *alba, fructu ovato compreſſo, cortice glabro, pinnis foliorum latioribus & ſerratis.* The Hickery Walnut.

8. JUGLANS *alba, fructu ovato compreſſo, nucleo dulci, cortice ſquamoſo. Clay. Flor. Virg.* The Shagbark Walnut.

9. JUGLANS *alba, fructu minori, cortice glabro. Clay. Flor. Virg.* The

ſmall Hickery, or white *Virginia* Walnut.

10. Juglans *alba procerior, fructu minimo, putamine teneriori, pinnis foliorum minoribus. Clay. Flor. Virg.* The leaſt white *Virginian* Walnut, commonly called Pignuts.

This Genus of Plants has been univerſally titled *Nux juglans*, till Dr. *Linnæus* alter'd it to this of *Juglans*, the other being a compound Name.

The four Sorts firſt-mention'd are propagated promiſcuouſly in *England*, and I believe are all ſeminal Variations, and not diſtinct Species, as in moſt other Sorts of Fruit-trees; for it rarely happens, that the Trees raiſed from Seeds produce the ſame Sort of Fruit again: ſo that thoſe who would be ſure of their Fruit, ſhould either make choice of ſuch Trees in the Nurſery which have produced Fruit, and prove to be the Sort they would have, or elſe inarch the Sorts intended upon any common Walnut-ſtock; in which Method they will ſucceed; but theſe ſeldom make ſo good Trees as thoſe which are raiſed from Seeds.

The firſt and ſecond Sorts are chiefly preferr'd for their Fruit, which are very large; and the Shells of the ſecond Sort are ſo tender, as to be broken between the Fingers without any Difficulty; for which Reaſon it is eſteem'd the beſt worth propagating, for the Fruit, of any of the Sorts.

The *Virginian* Sorts are preſerved as Rarities, by ſuch Perſons who are curious in collecting the ſeveral Sorts of Trees; but theſe are all worth cultivating for their Timber, which is preferable to that of our common Walnuts; and theſe Trees are equally as hardy, and ſome of them of much quicker Growth than the common Sort, eſpecially the fifth and ſixth Sorts; the firſt of which produces great Quantities of Fruit annually in the Phyſic-garden; but they are of no Uſe, except to propagate the Species; for their Shells are ſo hard as ſcarcely to be broken with a Mallet; and the Kernel is ſo ſmall, that it is not worth the Trouble of coming at it.

All the Sorts of Walnuts which are propagated for Timber, ſhould be ſown in the Places where they are to remain; for the Roots of theſe Trees always incline downward; which, being ſtopp'd or broken, prevent their aſpiring upward; ſo that they afterwards divaricate into Branches, and become low-ſpreading Trees: but ſuch as are propagated for Fruit, are greatly mended by tranſplanting; for hereby they are render'd more fruitful, and their Fruit are generally larger and fairer; it being a common Obſervation, that downright Roots greatly encourage the luxuriant Growth of Timber in all Sorts of Trees; but ſuch Trees as have their Roots ſpreading near the Surface of the Ground, are always the moſt fruitful.

The Nuts ſhould be preſerved in their outer Covers in dry Sand until *February*; when they ſhould be planted in Lines, at the Diſtance you intend them to remain; but in the Rows they may be placed pretty cloſe, for fear the Nuts ſhould miſcarry; and the young Trees, where they are too thick, may be removed, after they have grown two Years, leaving the Remainder at the Diſtance where they are to ſtand.

In tranſplanting theſe Trees, you ſhould always obſerve never to prune either their Roots or Branches, both which are very injurious to them; nor ſhould you be too buſy in lopping or pruning the Branches of theſe Trees; for it often cauſes them to decay: but when there is a Neceſſity of cutting any of their Branches off, it ſhould be done early in *September*, that the Wound may heal over before the Cold increaſes; and the Branches ſhould always be cut off quite cloſe to the Trunk, otherwiſe the Stump which is left will decay, and rot the Body of the Tree.

The beſt Seaſon for tranſplanting theſe Trees is as ſoon as the Leaves begin to decay; at which time, if they are carefully taken up, and their Branches preſerved intire, there will be little Danger of their ſucceeding, altho' they are eight or ten Years old, as I have ſeveral times experienced.

This Tree delights in a firm rich loamy Soil, or ſuch as is inclinable to Chalk or Marl; and will thrive very well in ſtony Ground, and on chalky Hills, as may be ſeen by thoſe large Plantations near *Leatherhead*, *Godſtone*, and *Carſhalton* in *Surry*, where are great Numbers of theſe Trees planted upon the Downs; which annually produce large Quantities of Fruit, to the great Advantage of their Owners; one of whom, I have been told, farms the Fruit of his Trees, to thoſe who ſupply the Markets, for thirty Pounds *per Annum*.

The Diſtance theſe Trees ſhould be placed, ought not to be leſs than forty Feet, eſpecially if regard be had to their Fruit; though when they are only deſigned for Timber, if they ſtand near, it promotes their upright Growth. The black *Virginian* Walnut is much more inclineable to grow upright than the common Sort; and the Wood being generally of a more beautiful Grain, renders it preferable to that, and better worth cultivating. I have ſeen ſome of this Wood which hath been beautifully vein'd with Black and White; which, when poliſh'd, has appear'd at a Diſtance like vein'd Marble. This Wood is greatly eſteem'd by the Cabinet-makers for Inlaying, as alſo for Bedſteads, Stools, Tables, and Cabinets; and is one of the moſt durable Woods for thoſe Purpoſes yet known, it being rarely infected with Inſects of any Kind (which may proceed from its extraordinary Bitterneſs): but it is not proper for Buildings of Strength, it being of a moſt brittle Nature, and exceeding ſubject to break very ſhort, tho' it commonly gives Notice thereof, by its cracking ſome time before it breaks.

The general Opinion, that the beating of this Fruit improves the Trees, I do not believe, ſince in the doing of this, the younger Branches are generally broken and deſtroyed: but as it would be exceeding troubleſome to gather it by Hand, ſo in beating it off, great Care ſhould be taken that it be not done with Violence, for the Reaſon before aſſigned. In order to preſerve the Fruit, it ſhould remain upon the Trees till it is thorough ripe; when it ſhould be beaten down, and laid in Heaps for two or three Days; after which they ſhould be ſpread abroad, when, in a little time, their Huſks will eaſily part from the Shells: then you muſt dry them well in the Sun, and lay them up in a dry Place, where Mice or other Vermin cannot come to them: in which Place they will remain good for four or five Months: but there are ſome Perſons who put their Walnuts into an Oven, gently heated, where they let them remain four or five Hours to dry; and then put them up in oil Jars, or any other cloſe Veſſel, mixing them with dry Sand; by which Method they will keep good ſix Months. The putting of them in the Oven is, to dry the Germ, and prevent their Sprouting: but if the Oven is too hot, it will cauſe them to ſhrink; therefore great Care muſt be had to that.

JUJUBE. *Vide* Ziziphus.

JULIANS, or ROCKETS. *Vide* Heſperis.

JULY FLOWER. *Vide* Caryophyllus.

JUNCUS, Ruſh.

The *Characters* are;

It hath a Flower compoſed of many Leaves, which are placed orbicularly, and expand in form of a Roſe: from the Centre of which riſes the Pointal, which afterward becomes a Fruit or Huſk, which is generally three-cornered, opening into three Parts, and full of roundiſh Seeds.

The *Species* are;

1. JUNCUS *acutus, capitulis ſorghi. C. B. P.* Prickly large Sea Ruſh.

2. JUNCUS *acutus maritimus Anglicus. Park. Engliſh* Sea prickly Ruſh.

3. JUNCUS *acutus, panicula ſparſa. C. B. P.* Common hard Ruſh.

4. JUNCUS *lævis, panicula ſparſa, major. C. B. P.* Common ſoft Ruſh.

5. JUNCUS *lævis, panicula non ſparſa. C. B. P.* Soft Ruſh, with a more compact Panicle.

6. JUNCUS *acumine reflexo, major. C. B. P.* The greater bending Ruſh.

Theſe Sorts of Ruſhes are not cultivated, but grow wild in ſeveral Parts of *England*; and ſome Sorts of them are very troubleſome Weeds, in low moiſt ſtrong Lands. The firſt and ſecond Sorts grow on the Sea-ſhores, where they are frequently watered by the Salt-water. Theſe two Sorts are planted with great Care on the Banks of the Sea in *Holland*, in order to prevent the Water from waſhing away the Earth; which, being very looſe, would be in Danger of removing every Tide, if it were not for the Roots of theſe Ruſhes; which faſten themſelves very deep in the Ground, and mat themſelves near the Surface, ſo as to hold the Earth cloſely together. Therefore, whenever the Roots of theſe Ruſhes are deſtroyed, the Inhabitants immediately repair them to prevent farther Damage. In the Summer-time, when the Ruſhes are fully grown, the Inhabitants cut them, and tie them up into Bundles, which are dried, and afterward carried into the larger Towns and Cities, where they are wrought into Baſkets, and ſeveral other uſeful Things, which are frequently ſent into *England*. Theſe Sorts do not grow ſo ſtrong in *England*, as they do on the *Maeſe*, and ſome other Places in *Holland*, where I have ſeen them upward of four Feet high.

The third and fourth Sorts grow on moiſt ſtrong uncultivated Lands in moſt Parts of *England*, and conſume the Herbage where they are ſuffered to remain. The beſt Method of deſtroying theſe Ruſhes is; to fork them up clean by the Roots in *July*; and after having let them lie a Fortnight or three Weeks to dry, to lay them in Heaps, and burn them gently; and the Aſhes which theſe afford, will be good Manure for the Land; but in order to prevent their growing again, and to make the Paſture good, the Land ſhould be drained and well plowed, and ſown with Rye-graſs, and White *Dutch* Clover, which will make a good Sward in one Year, if it be regularly managed; for the right ordering of which you are deſired to turn to the Article *Paſture*, where there are proper Inſtructions exhibited.

JUNIPERUS, The Juniper-tree.

The *Characters* are;

The Leaves are long, narrow, and prickly: the Male Flowers are in ſome Species produced at remote Diſtances from the Fruit on the ſame Tree; but in other Species they are produced on different Trees from the Fruit: the Fruit is a ſoft pulpy Berry, containing three Seeds in each.

The *Species* are;

1. JUNIPERUS *vulgaris fruticoſa. C. B.* The Common *Engliſh* Juniper.

2. JUNIPERUS *vulgaris arbor. C. B.* The Tree, or *Swediſh* Juniper.

3. JUNIPERUS *Virginiana. H. L. Folio ubique juniperino. Boerh. Ind.* The Cedar of *Virginia*.

4. JUNIPERUS *Virginiana, foliis inferioribus juniperinis, ſuperioribus ſabinam, vel cypreſſum referentibus. Boerh. Ind.* Red *Virginian* Cedar.

5. JUNIPERUS *Bermudiana. H. L.* The Cedar of *Bermudas*.

6. JUNIPERUS *minor montana, folio latiore, fructuque longiore. C. B. P.* Leſſer mountain Juniper, with a broader Leaf, and a longer Fruit.

7. JUNIPERUS *major, bacca cærulea. C. B. P.* Greater Juniper, with a blue Berry.

8. JUNIPERUS *major, bacca rufeſcente. C. B. P.* Greater Juniper, with a rediſh Berry, commonly called the *Phœnician* Cedar.

9. JUNIPERUS *Cretica, ligno odoratiſſimo, κέδρος Græcorum recentiorum. Tourn. Cor.* Juniper of *Crete*, with a ſweet-ſcented Wood, which is the Cedar of the modern *Greeks*.

10. JUNIPERUS *latifolia arborea, ceraſi fructu. Tourn. Cor.* Broad-leav'd *Eaſtern* Tree-juniper, with a cherry-ſhap'd Fruit.

11. JUNIPERUS *Orientalis, vulgari ſimilis, magno fructu nigro. Tourn. Cor. Eaſtern* Juniper like the common Sort, with a large black Fruit.

12. JUNIPERUS *foliis undique imbricatis ovatis obtuſis. Flor. Leyd.* Juniper with oval obtuſe Leaves lying over each other, commonly called the Berry-bearing Cedar.

13. JUNIPERUS *major, foliis imbricatis obtuſis, fructu flaveſcente.* Greater Juniper, with obtuſe Leaves lying over each other, and a yellowiſh Fruit, commonly called Cedar of *Lycia*.

14. JUNIPERUS *foliis quadrifariam imbricatis acutis. Flor. Leyd.* Juniper with pointed Leaves lying four ways over each other, commonly called the great *Spaniſh* Juniper.

The firſt of theſe Plants is very common upon dry Heaths in divers Parts of *England*; but has been introduced into Gardens, and was formerly in great Requeſt for ever-green Hedges: but as it is very ſubject to decay in Patches, and thereby render ſuch Hedges very unſightly, as alſo being very troubleſome to ſhear, they have been of late almoſt intirely rejected. But however improper theſe Trees may be for Hedges, or to clip into Pyramids or Balls; yet they ſhould have a Place in ſmall Wilderneſs-quarters, amongſt ever-green Plants of low Stature, where, by their Diverſity, they will add to the Beauty of thoſe Plantations.

The ſecond Sort will grow to a larger Magnitude, ſometimes riſing to the Height of eighteen or twenty Feet: this may alſo be intermixed with other ever green Trees of the ſame Growth; where, by its different-ſhap'd Leaves and Colour, it will increaſe the Beauty of ſuch Places.

Theſe Plants are both propagated by ſowing their Seeds, the beſt Seaſon for which is in *September*, as ſoon as they are ripe; for if they are kept until Spring before they are ſown, they will not come up until the ſecond Year. The Ground in which theſe Seeds are ſown ſhould be freſh and light, but it ſhould not be dunged: it ſhould be well dug, and levell'd very even; then ſow your Seeds thereon pretty thick, and ſift ſome Earth over them about half an Inch thick: this Bed will require no farther Care, than only to keep it clear from Weeds; and toward the Middle or Latter-end of *April*, you will find ſome of your Plants appear above ground; though the greateſt Part of them perhaps may lie till the Spring following before they come up; at which time you ſhould carefully clear the Beds from Weeds; and in very dry Weather refreſh them with ſome Water, which will greatly promote their Growth: but if the Bed, in which theſe Seeds are ſown, is much expoſed to the Sun, it ſhould be ſhaded with Mats in the Day; for when the Plants come firſt up, they will not bear too much Heat. In this Bed they ſhould remain till the following Autumn, when you muſt prepare ſome Beds to tranſplant them into, which ſhould alſo be of light freſh undung'd Soil; and having well dug and cleanſed the Ground from all noxious Weeds and Roots, you ſhould make them level: then, in the Beginning of *October*, which is the proper Seaſon for removing theſe Plants, you ſhould raiſe up the young ones with a Trowel, preſerving as much Earth as poſſible to their Roots, and plant them into the Beds about a Foot aſunder each way, giving them ſome Water to ſettle the Earth to their Roots: and if it ſhould prove very dry Weather, you may lay a little Mulch upon the Surface of the Ground round their Roots, which will be of great Service to the Plants.

In theſe Beds they may remain two Years, obſerving to keep them clear from Weeds; and in the Spring you ſhould ſtir the Ground gently between them, that their Roots may with greater Eaſe ſtrike into it; after which time they ſhould be tranſplanted, either into a Nurſery, at the Diſtance of three Feet Row from Row, and eighteen Inches aſunder in the Rows, or into the Places where they are to remain for good. The beſt Seaſon to tranſplant them (as I before obſerved) is in the Beginning of *October*; and you ſhould take them up carefully, to preſerve a Ball of Earth to their Roots; and when planted, their Roots ſhould be mulched: all which carefully attended to, obſerving alſo to refreſh them with Water in very dry Weather, until they have taken new Root, will preſerve them from the Danger of not growing; and they being extreme hardy, in reſpect to Cold, will defy the ſevereſt of our Winters to injure them, provided they are not planted in a moiſt or rich Soil.

In order to have theſe Trees aſpire in Height, their Under-branches ſhould be taken off, eſpecially where they are inclined to grow out ſtrong: but they muſt not be kept too cloſely pruned, which would retard their Growth; for all theſe ever-green Trees do more or leſs abound with a reſinous Juice, which in hot Weather is very apt to flow out from ſuch Places as are wounded: ſo that it will not be adviſeable to take off too many Branches at once, which would make ſo many Wounds from which their Sap in hot Weather would flow in ſuch Plenty, as to render the Trees weak and unhealthy.

The two Sorts of *Virginia* Cedars grow to a much greater Height than the former, and in their native Country afford excellent Timber for many Uſes; but with us there are very few which are above twenty or twenty-five Feet high; tho' there is no doubt of their growing larger; for they thrive very faſt after the three firſt Years, and reſiſt the ſharpeſt Froſts of our Climate exceeding well, and are very apt to grow ſtrait and regular, provided they are not ſuffered to ſhoot out too much at Bottom.

Theſe Plants are alſo propagated by Seeds, which muſt be procured from *Virginia* or *Carolina* (for they rarely produce ripe Seeds in *England*), and ſown as was directed for the other Junipers: but as this Seed can't be procured in *England* till Spring; ſo, when ſown at that Seaſon, it remains in the Ground until the ſucceeding Spring before the Plants appear: therefore you muſt obſerve to keep the Beds clear from Weeds, and not ſuffer the Seeds to be diſturbed; which is often the Fault of ſome impatient People, who think, becauſe the Plants do not riſe the firſt Year, that they will never come up, and ſo dig up the Ground again, whereby their Seeds are buried; but if they are let remain, they ſeldom fail to grow; tho' ſometimes it is two Years after ſowing, before they come up. When the Plants are come up, they muſt be carefully weeded; and in dry Weather ſhould be refreſhed with Water, which will greatly forward their Growth; and the Autumn following they ſhould be tranſplanted into Beds (as was directed for the common Juniper), obſerving to preſerve a Ball of Earth to their Roots; and after they are planted, if the Seaſon is dry, they muſt be carefully watered, and the Surface of the Ground covered with Mulch, to prevent the Sun and Wind from entering the Earth, to dry their Fibres: but they ſhould not be too much watered, which often proves injurious to theſe Trees, by rotting their tender Fibres ſoon after they are emitted, whereby the Plants have been often deſtroyed.

In theſe Beds they may remain two Years, obſerving to keep them clear from Weeds: and in Winter you ſhould lay a little freſh Mulch upon the Surface of the Ground round their Roots, which will prevent the Froſt from penetrating to them, and effectually preſerve them; for while the Plants are ſo young, they are liable to be impaired by hard Froſts, when too much expoſed thereto; but when they have attained a greater Strength, they will reſiſt the ſevereſt of our Cold.

After two Years, they ſhould either be removed into a Nurſery (as was directed for the common Juniper), or tranſplanted where they are deſigned to remain; obſerving always to take them up carefully, otherwiſe they are ſubject to fail upon tranſplanting; as alſo to mulch the Ground, and water them, as was before directed, until they have taken Root; after which they will require no farther Care, than only to keep the Ground clear about their Roots, and to prune up their Side-branches to make them aſpire in Height.

The Soil in which you plant theſe Trees, ſhould be freſh and light, but muſt not be dunged, eſpecially at the time when they are planted; for Dung is very hurtful to them, eſpecially if it be not quite rotted to Mould: therefore the Mulch which is laid upon the Surface of the Ground, ſhould not be Dung; but rather ſome freſh Turf cut from a Common, and the Graſs turned downward: which is certainly the beſt Sort of mulching for moſt Plants, it affording no ill Scent, nor is it ſubject to breed Vermin, or be unſightly; and will effectually anſwer all the Purpoſes of Mulch, without any Danger of hurting the Plants.

Theſe Trees, being thus managed, will in a few Years riſe to a conſiderable Stature; and, by the Variety of their ever-green Leaves, and manner of Growth, will greatly add to the Beauty of ſuch Plantations, if rightly diſpoſed; which indeed is what we ſeldom obſerve in any of the *Engliſh* Gardens or Wilderneſſes; for there are few People who conſider the different Growths of the ſeveral Trees with which they compoſe ſuch Plantations, ſo as to place the talleſt-growning Trees the backwardeſt from Sight, and the next Degree to ſucceed them, and ſo gradually diminiſhing till we come to the common Juniper, and others of the ſame Growth; whereby all the Trees will be ſeen, and the gradual Declivity of their Tops will appear like a verdant Slope, and be much more agreeable to the Sight, as alſo more advantageous to the Growth of the Trees, than to place Shrubs of humble Growth near ſuch Plants as will grow to the firſt Magnitude, whereby the Shrub is hid from Sight, and will be overſhadowed and deſtroyed: nor can the Diſtance which each Tree requires, be ſo juſtly proportioned any other way; for, in this Diſtribution, the largeſt Trees, being ſeparated by themſelves, may be planted at a due Diſtance; and then thoſe of a middling Growth ſucceeding, may be accordingly allowed ſufficient room; and the ſmaller, which are next the Sight, being placed much cloſer, will hide the naked Stems of the larger Trees, and have an agreeable Effect upon the Sight.

The Timber of theſe Trees is of excellent Uſe in *America* for building of Veſſels, wainſcoting Houſes, and for making many Sorts of Utenſils, it abounding with a bitter Reſin, which prevents its being deſtroyed by Vermin; but it is very brittle, and ſo not proper for ſtubborn Uſes: but however, by increaſing the Number of our Timber-trees, we ſhall find many Advantages, beſides the Pleaſure their Variety affords; for we may hereby have Trees of very different Kinds, which are adapted to grow in various Soils and Situations; whereby we ſhall never want proper Trees for all the different Sorts of Soils in *England*, if proper Care be taken in their Choice; which would be a great Improvement to many Parts of this Kingdom, which now lie unplanted, becauſe the Owner, perhaps, finds that neither Oaks nor Elms will thrive there; and ſo conſequently concludes, that no other Sort will: which is a great Miſtake; for if we conſider how different the Structure of Trees is (being deſigned by the wiſe Author and Contriver of all Things, to grow on different Soils and Situations), and only obſerve what Sorts are adapted for growing upon dry barren Mountains, and what are deſigned for the lower and richer Valleys, we need never be at a Loſs for proper Trees for all Sorts of Ground.

The *Bermudas* Cedar, coming from a more temperate Climate, is ſomewhat tenderer than the former, and more impatient of our Cold (eſpecially while the Plants are young); but afterwards it endures it very well, as may be ſeen by divers Trees which are now growing in *England*; ſome of which are upward of twenty Feet high, and have reſiſted ſeveral ſevere Winters without Injury: but theſe Cedars are not of ſo quick of Growth here, as in a more temperate Climate: for in their native Country they will grow to be large enough for Ship-timber in twenty Years from Seed (as I have been credibly informed by ſeveral Perſons who have lived there many Years): however, when they have been ſome time naturalized to our Country, there is no doubt but they will thrive much better than at preſent, eſpecially when the Trees here produce Berries; for the young Plants raiſed therefrom will be much hardier than thoſe procured from foreign Seeds, as is evident in many other Kinds.

Theſe Plants are propagated by Seeds in the ſame manner as the former, with only this Difference, that theſe ſhould be ſown in Pots or Tubs of Earth, that they may be removed into Shelter in the Winter-time, otherwiſe the young Plants are often hurt by hard Froſts: but they will require no more Care than only to be placed under a common Hot-bed-frame, that the Glaſſes may be conſtantly kept off in mild Weather, when they can't have too much free Air, and only covered in hard Froſts. Theſe Seeds conſtantly remain in the Ground until the ſecond Year, before they come up; therefore the Earth in the Pots ſhould not be diſturb'd: and in the Summer-time they ſhould be placed in the Shade, to prevent the Earth from drying too faſt; and in very dry Weather they ſhould be often watered; but do not give too much Water to them at once, which would rot the Seeds.

The Spring following, when the young Plants come up, they muſt be carefully cleared from Weeds, and in dry Weather refreſh'd with Water; but ſhould ſtand, during the Summer-ſeaſon, in a Place defended from ſtrong Winds; and in Winter muſt be placed into Shelter, where they may be cover'd in hard froſty Weather; but muſt have open Air when the Weather is mild. In *April* following you ſhould tranſplant them each into a ſingle Halfpeny Pot filled with freſh light Earth, being careful to raiſe them up with a Ball of Earth to their Roots; and when they are planted, you ſhould water them, to ſettle the Earth to their Roots; then place the Pots in a warm Situation, where they may be defended from Sun and Wind: but if you will beſtow a moderate Hot-bed to plunge the Pots upon, it will greatly promote their taking new Root: however, you muſt carefully defend them from the great Heat of the Sun, which is injurious to them when freſh remov'd; but when they have taken Root, you may expoſe them by degrees to the open Air: if you ſuffer the Pots to remain plunged all the Summer, it will preſerve the Earth therein from drying ſo faſt as it would do, if they were ſet upon the Ground.

In *October* you ſhould again remove theſe Plants into Shelter, or elſe plunge their Pots into the Ground under a warm Hedge, where they may be protected from the cold North and Eaſt Winds; and in the Spring following you muſt ſhift the Plants into Pots a Size bigger, taking away ſome of the Earth from the Outſide of the Ball, and adding ſome freſh, which will promote their Growth; and ſo continue to manage them as was before directed, until you plant them out in the Places where they are deſigned to remain; which ſhould not be done till they are three or four Years old, by which time they will be ſtrong enough to bear the Cold.

The Reaſon for my directing theſe Plants to be preſerved in Pots until they are planted out for good is, becauſe they are difficult to tranſplant; and being tender, will require ſome Shelter while young; and whoever obſerves the Method here laid down, will find the Plants ſo managed to gain two Years Growth in ſix, from thoſe raiſed in the open Air, and be in leſs Danger of being deſtroyed: and as the Trouble and Expence in raiſing them this way is not great, ſo it is worth practiſing; ſince in a few Years the Trees will recompenſe the Trouble.

Theſe Plants ſhould have a freſh light undung'd Soil, as the former, and may be placed in Plantations with them, obſerving to let theſe be placed in a Line below thoſe; for they will not grow ſo faſt with us as thoſe do, nor do I believe they will make ſuch large Timber; tho' this is much preferable to the Timber of the other Sorts.

The Timber of this Tree is of a rediſh Colour, and very ſweet; and is commonly known in *England* by the Name of Cedar-wood; tho' there are divers Sorts of Wood called by that Name, which come from very different Trees, eſpecially in the *Weſt-Indies*, where there are ſeveral Trees of vaſtly different Appearances and *Genera*, which have that Appellation: it is this Wood which is uſed for Pencils, as alſo to wainſcot Rooms, and make Staircaſes; it enduring longer ſound than moſt other Sorts of Timber; which, perhaps, may be owing to ſome extreme bitter Taſte in the Reſin, with which the Tree abounds; for it is very remarkable, that the Worms do not eat the Bottoms of the Veſſels built with this Wood, as they do thoſe built with Oak; ſo that the Veſſels built with Cedar are much preferable to thoſe built with any other Sort of Timber, for the Uſe of the *Weſt-India* Seas; but they are not fit for Ships of War, the Wood being ſo brittle as to ſplit to Pieces with a Cannon-ball.

The ſixth and ſeventh Sorts grow in Plenty upon the *Alps*, and the *Pyrenean* Mountains. The eighth, twelfth, thirteenth, and fourteenth Sorts grow in *Spain*, *Portugal*, and other warm Countries: and the ninth, tenth, and eleventh, grow in the *Archipelago*, tho' it is very probable theſe may alſo grow upon the Mountains in *Spain*, and in ſome other Places; for I have received Branches of ſome of theſe Sorts which were ſent from *Spain*; but as they had no Fruit upon them, ſo I could not determine their Kinds.

All theſe Plants are hardy enough to live in the open Air in *England*, after they have acquired ſome Strength. Theſe ſhould be ſown and managed as hath been directed for the *Bermudas* Cedar; with which all theſe Sorts will thrive, and make conſiderable Progreſs. The Berries of all theſe Sorts lie in the Ground a Year, and ſometimes two Years, before the Plants will appear; ſo that the Earth ſhould not be diſturbed, if the Plants ſhould not come up ſo ſoon as expected.

There have been many Plants of the eighth Sort raiſed in *England* from Berries, which were brought from *Biſcay* in *Spain*, ſome Years ſince: and of late a great many Plants of the twelfth and thirteenth Sorts have been raiſed from Berries, which were ſent from *Portugal*.

As ſeveral of theſe Sorts grow to

the Height of eighteen or twenty Feet, ſo the procuring as many of the Sorts, as can be gotten from the Countries of their Growth, will be adding to the Variety of our ever-green Plantations, which can't be too much propagated in *England*; where in general our Winters are temperate enough for them to thrive to Advantage: and as the Sorts, which are a little more tender than the others, obtain Strength, they will be in leſs Danger of ſuffering by ſevere Winters, as we find by many other Plants, which were ſo tender as not to live in the open Air at firſt, but now defy the ſevereſt Cold of our Climate.

JUSTICIA. This Plant was ſo named by the late Dr. *Houſtoun*, in Honour to *James Juſtice*, Eſq; a great Lover and Encourager of Gardening and Botany.

The *Characters* are;

It hath an anomalous Flower conſiſting of one Leaf, which is divided into two Lips almoſt to the Bottom, the under one being, for the moſt part, intire; but the upper Lip is divided into two: the Flowers are ſucceeded by inverſed ſpear-ſhaped Fruit, which have one Cell, containing many flat Seeds.

Dr. *Linnæus* has joined to this Genus the *Adhatoda* of *Tournefort*, and the *Ecbolium* of *Rivinus*: but if the Fruit is admitted as a characteriſtic Note, they cannot be joined together; the *Adhatoda* having a bicapſular Pod, whereas the Pod of the *Juſticia* is unicapſular.

The *Species* are;

1. Justicia *annua, hexangulari caule, foliis circææ conjugatis, flore miniato. Houſt.* Annual Juſticia, with an hexangular Stalk, Inchanter's Nightſhade-leaves growing oppoſite, and a carmine Flower.

2. Justicia *fruteſcens, floribus ſpicatis majoribus, uno verſu diſpoſitis. Houſt.* Shrubby Juſticia, with larger Flowers growing in Spikes, appearing on one Side of the Stalk.

Theſe two Plants were diſcovered by the late Dr. *Houſtoun*, at *La Vera Cruz*, from whence he ſent the Seeds and Specimens to *England*. The firſt Sort grows about two or three Feet high, and periſhes ſoon after the Seeds are ripe; but the ſecond Sort grows to the Height of ſix or ſeven Feet, and divides into many Branches, which become woody: at the End of the Branches the Flowers are produced in Spikes, which are of a carmine Colour.

Theſe Plants may be propagated by Seeds, which ſhould be ſown early in the Spring in ſmall Pots filled with freſh light Earth, and plunged into a moderate Hot-bed of Tanners Bark. When the Plants begin to appear, the Glaſſes of the Hot-bed ſhould be raiſed every Day, when the Weather is warm, to admit freſh Air to them. The Plants muſt alſo be frequently watered in warm Weather.

When the Plants are about two Inches high, they ſhould be carefully taken up, and each tranſplanted into a ſeparate ſmall Pot filled with freſh light Earth, and then plunged into the Hot-bed again, being careful to water and ſhade them until they have taken new Root; after which time they ſhould have Air admitted to them every Day, in proportion to the Warmth of the Seaſon.

As the Plants advance in their Growth, they ſhould be ſhifted into larger Pots; for if their Roots are too much confined, the Plants will not make any conſiderable Progreſs: but they ſhould not be over-potted; for that will be of worſe Conſequence than under-potting them; becauſe when they are planted in very large Pots, they will ſtarve and decay, without producing any Flowers. They are too tender to endure the open Air in this Country; therefore they ſhould always remain in the Hot-bed, being careful to let them have a due Proportion of Air in hot Weather: and the annual Sort ſhould be brought forward as faſt as poſſible in the Spring, that the Plants may flower early; otherwiſe they will not produce good Seeds in *England*.

The ſecond Sort ſhould remain in the Hot-bed during the Summer-ſeaſon (provided there be room under the Glaſſes, without being ſcorched); but at *Michaelmas* they ſhould be removed into the Stove, and plunged into the Bark-bed; where they muſt remain during the Winter-ſeaſon, obſerving to keep them warm, as alſo to water them gently two or three times a Week, according as they ſhall require. The following Summer theſe Plants will flower, and abide ſeveral Years; but they rarely produce good Seeds in *Europe*.

IXIA.

The *Characters* are;

The Flower is incloſed in a permanent Sheath, which divides into two unequal Portions: the Flower is compoſed of ſix oblong Petals, which are equal: in the Centre of the Flower is ſituated an oval three-cornered Pointal, attended by three Stamina, *crowned with ſhort flat Summits: the Pointal afterward changes to an oval three-cornered Capſule, opening in three Cells, which are filled with roundiſh Seeds.*

The *Species* are;

1. Ixia *foliis gladiolatis alternis, floribus terminatricibus.* Ixia with ſword-ſhap'd Leaves growing alternate, and Flowers on the Tops of the Stalks.

2. Ixia *foliis lineari-enſiformibus, floribus alternis, caule bulbifero.* Ixia with narrow ſword-ſhaped Leaves, Flowers growing alternate, and Stalks producing Bulbs.

3. Ixia *foliis linearibus, floribus confertis terminatricibus.* Ixia with narrow graſſy Leaves, and Flowers, growing in a Cluſter on the Top of the Stalks.

Theſe Plants are all Natives of the Country near the *Cape of Good Hope*. The firſt Sort hath been ſome Years an Inhabitant of the *Engliſh* Gardens, but was not reduced to any Genus: by ſome Perſons it has been intitled *Siſyrinchium*, to which Genus it is near a kin; but, on a ſtrict Examination of the Characters, it appears to belong to this Genus, which muſt be placed between the *Crocus* and *Gladiolus*.

The other two Sorts I raiſed from Seeds, which were ſent me by my learned Friend, Dr. *Job Baſter*, F. R. S. of *Zirkzee* in *Holland*, who procured them from the *Cape of Good Hope*, with many other curious Plants.

The firſt Sort is hardy enough to reſiſt the Cold of our ordinary Winters in the open Air, if it is planted in a warm Situation, and a dry Soil; but the Plants which grow abroad do not ripen Seeds in *England*. Therefore where Perſons are deſirous to obtain Seeds, the Plants ſhould be plunged into an Hot-bed, where they will produce plenty of Flowers and Seeds every Year. Thoſe Plants which are ſo managed, will flower in *June*, and their Seeds will ripen the Beginning of *September*; but thoſe which grow in the open Air, do ſeldom flower before the latter End of *July*; however, theſe Flowers will continue longer in Beauty, than thoſe which are placed in the Hot-bed.

The Roots of this Sort ſpread under the Surface of the Ground in the ſame manner as the flag-leaved *Iris*, to which they bear a great Reſemblance, as do alſo their Leaves; but the Flowers are ſpread open in the middle of the Day, which are compoſed of ſix Leaves twiſted at the Bottom; theſe are of an orange Colour, and ſpotted with red, and ſeldom continue longer than three or four Days in Beauty; but new Flowers are produced as the others decay, ſo that there is a Succeſſion of them near a Month.

This Sort is propagated by Seeds, which if ſown in a warm Border of light Earth in the Autumn, the Plants will come up the following Spring, and may afterward be treated in the ſame manner as the *Flag-Iris*; to which Article the Reader may turn for Directions.

The ſecond and third Sorts are leſs hardy, ſo theſe muſt be ſheltered from the Froſt in Winter; but they ſhould have as much free Air in mild Weather as poſſible: therefore if the Pots in which the Roots are planted, be placed under a Glaſs-frame in Winter, where they may enjoy the open Air at all times when the Weather is mild, they will flower much ſtronger, than if they are treated more tenderly, and the Flowers will continue much longer in Beauty.

The Flowers of the ſecond Sort are white, having a dark Streak on the Back of each Leaf: theſe are produced alternately upon the Stalks; and below theſe, at the Joints of the Stalks, there are ſmall Bulbs produced, which, if planted, will become Roots, whereby this Sort may be increaſed plentifully, as alſo by Off-ſets from the Root; ſo that when the Plant is obtained, a ſingle Root will ſoon furniſh a Supply, to ſtock the Garden: and as the Plant is not very tender, ſo it may ſucceed, if planted in a warm South Border of light Earth; at leaſt, with a little Protection in ſevere Froſt, there can be no hazard of its being loſt.

The third Sort is more valuable than the ſecond, the Flowers being much more beautiful: this hath a very ſmall oval bulbous Root, covered with a grey Skin; the Leaves are long and narrow; the Flower-ſtem is produced immediately from the Root, which riſes about one Foot high, being very ſlender: on the Top are produced five or ſix Flowers growing in a Cluſter; theſe are compoſed of ſix oval Petals of a beautiful yellow Colour, each having a dark-purple Spot at the Bottom; ſo that when the Flowers are ſpread open, they make a fine Appearance. Both theſe Sorts flower in *April*, and the ſecond generally produces ripe Seeds, but the third hath not as yet produced any Seeds in *England*; nor doth it ſend forth many Off-ſets from the Root, ſo that it is at preſent pretty rare in *England*.

This Sort ſhould be planted in ſmall Pots filled with freſh light Earth, and in Winter muſt be placed in a Green-houſe, where, in mild Weather, it may enjoy the free Air, but protected from Froſt. During the time that the Plants are in a growing State (which is from *November* to *May*) they muſt be frequently refreſhed with Water; in the cold Months twice a Week will be ſufficient; but in *April* they ſhould be gently watered almoſt every Day, if the Seaſon prove warm: toward the End of *May*, the Leaves and Stalks of the ſecond and third Sorts decay; when the Pots may be placed in a ſhady Situation, where they will require but little

Water during the time they are inactive: and in *July* the Roots may be tranſplanted, before they put out new Fibres, which they generally begin to do in *Auguſt*, eſpecially if the Weather prove wet.

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K A

KALI, Glaſſwort.

The *Characters* are;

The Flower is apetalous: the Empalement conſiſts of five Leaves, which expand in form of a Roſe, in the Centre of which is placed the Pointal, which is attended by five ſhort Stamina: *the Pointal afterward becomes an almoſt globular Fruit, having one Cell, in which is lodged a ſingle Seed, which is twiſted ſpirally.*

The *Species* are;

1. KALI *majus, cochleato ſemine. C. B. P.* Snail-ſeed Glaſſwort.

2. KALI *ſpinoſum, foliis longioribus & anguſtioribus. Tourn.* Prickly Glaſſwort, with longer and narrower Leaves.

3. KALI *ſpinoſum, foliis craſſioribus & brevioribus, Tourn.* Prickly Glaſſwort, with thicker and ſhorter Leaves.

4. KALI *Siculum lignoſum, floribus membranaceis. Boc. Rar. Plant. Sicilian* ligneous Glaſſwort, with membranaceous Flowers.

5. KALI *fruticoſum Hiſpanicum, tamariſci folio. Tourn.* Shrubby *Spaniſh* Glaſſwort, with a Tamariſk-leaf.

6. KALI *fruticoſum Hiſpanicum, geniſtæ fronde. Tourn.* Shrubby *Spaniſh* Glaſſwort, with Broom-tops.

7. KALI *fruticoſum Hiſpanicum, capillaceo folio villoſo. Tourn.* Shrubby *Spaniſh* Glaſſwort, with an hairy and downy Leaf.

8. KALI *foliis longioribus & anguſtioribus ſubhirſutis. Tourn.* Glaſſwort with longer and narrower ſomewhat hairy Leaves.

9. KALI *Orientale fruticoſum ſpinoſum, camphoratæ folio. Tourn Cor. Eaſtern* ſhrubby prickly Glaſſwort, with a ſtinking Ground-pine-leaf.

10. KALI *Orientale fruticoſum, flore maximo albido. Tourn. Cor. Eaſtern* ſhrubby Glaſſwort, with a very large whitiſh Flower.

11. KALI *Orientale fruticoſum. foliis ſedi minoris, flore purpureo. Tourn. Cor. Eaſtern* ſhrubby Glaſſwort, with Leaves like the leſſer Houſleek, and a purple Flower.

12. KALI *Orientale fruticoſum altiſſimum, florum ſtaminibus purpureis. Tourn. Cor.* The talleſt ſhrubby *Eaſtern* Glaſſwort, with Flowers having purple *Stamina*.

13. KALI *Orientale fruticoſum lanuginoſum. Tourn. Cor.* Woolly *Eaſtern* ſhrubby Glaſſwort.

14. KALI *Orientale fruticoſum, linariæ folio. Tourn. Cor. Eaſtern* ſhrubby Glaſſwort, with a Toad-flax-leaf.

15. KALI *Orientale fruticoſum, flore magno purpureo. Tourn. Cor.* Shrubby *Eaſtern* Glaſſwort, with a large purple Flower.

16 KALI *Orientale fruticoſum, floribus albis. Tourn. Cor.* Shrubby *Eaſtern* Glaſſwort, with white Flowers.

17. KALI *Orientale ſpinoſum ſubhirſutum, tenuiſſimo folio. Tourn. Cor.* Prickly *Eaſtern* hairy Glaſſwort, with a very narrow Leaf.

18. KALI *Orientale, capillaceo folio, flore purpuraſcente. Tourn. Cor. Eaſtern* Glaſſwort, with a capillaceous Leaf, and a purpliſh Flower.

The firſt Sort here mentioned grows wild in the *Mediterranean* in ſeveral Places, where it is gathered for the making Sode, which is a Sort of Pot-aſh uſed in the making of Soap. It is alſo cultivated in the South of *France*, in Salt-marſhes, for the ſame Purpoſe. This Plant ſeldom grows large, unleſs it is cultivated, which greatly improves its Size; ſo that it often grows from two to three Feet high, and divides into many Branches; whereas in the natural Places of its Growth it is ſeldom above a Foot high. The *Spaniards* alſo cultivate ſeveral of the Species here mentioned, in order to make Sode thereof; the beſt of which is brought from *Alicant* and *Carthagena*, where the Inhabitants cultivate the eighth Sort of Kali for this Purpoſe; which, as I have been informed, is that which makes the beſt Sort of Pot-aſh, called *Barillia*. The Salt of theſe Aſhes is clear and white; ſo is uſed in making of the fineſt Glaſs, and the hardeſt Soap.

They alſo in the ſame Country cultivate another Plant of a different Genus, for the ſame Purpoſe, which is a Species of Ficoides, and has been already mentioned under that Article. The Seeds of the latter I have ſeveral times received from thence, by the Title of *Barillia*, as I have alſo from *Egypt*, with the *Arabic* Title of *Kali*: but this is by ſome very curious Perſons affirmed to make a Pot-aſh of leſs Value, than that of the former; ſo that there is room to doubt which of the two it is, that the *Spaniards* prefer.

The Inhabitants of thoſe warmer Countries, who cultivate theſe Plants, ſow their Seeds early in the Spring, on low marſhy Ground, near the Sea, or on Salt-ponds, where the Plants ſoon come up, and in about three Months will be fit to cut for Uſe; when they mow it down, and dry it after the manner of Hay. When it is well dried, they dig Holes or Pits, in the Nature of Lime-kilns; then they ſet Fire to a Bundle of the Herb, which they throw into the Pit; and after that they throw three or four more Bundles into the Pit, which they ſuffer to be well lighted; then they fill the Pit with the dried Herb, and ſtop the Top of it up, leaving it to conſume for ſome time, to be reduced to Aſhes. When they open the Pit, they find the Salt incorporated into a ſolid Rock, which they are obliged to break, and raiſe up as Stones out of a Quarry.

This is the beſt Sort of Pot-aſh, and is brought from *Alicant*; and may be diſtinguiſhed from the others, by being dry and clean, and of a bluiſh Grey, both without and within; and, when broken, has no offenſive Smell.

The ſecond Sort in Goodneſs is brought from *Carthagena*: this has not the ſame bluiſh Colour as the former, but is more cruſted, and is generally brought over in larger Bales.

There are ſeveral other Sorts of Pot-aſh, which are made in *England*, from different Plants: but theſe are of little Value, compared with the former; ſo are little eſteemed. Theſe may be known by their dark Colour, fetid Scent, and alſo by their Moiſture.

The other Sorts of Kali here mentioned grow in the South of *France*, *Spain*, *Italy*, and the *Levant*: moſt of them are Inhabitants of the Sea-coaſts; but ſome have been found growing upon ſandy Grounds at a great Diſtance from the Sea. Theſe are frequently preſerved in ſome Botanic Gardens for the ſake of Variety; but they are too tender to perfect their Seeds in *England*, unleſs the Seaſon proves very warm.

The firſt, ſecond, third, and eighth Sorts are annual Plants: theſe I have ſeveral times cultivated in a Bed of common Earth, where the Plants have grown very large; but I could ſeldom procure good Seeds from them; for they ſeldom came into Flower till the Beginning of *September*, ſo that the Froſt deſtroyed them before the Seeds were near ripe; for the firſt Froſt in the Autumn kills them.

But if the Seeds of the beſt Kinds were ſent to the *Britiſh* Colonies in *America*, theſe Plants might be there cultivated to the great Advantage of the Inhabitants, and be a national Benefit. If ſome of the marſhy low Lands in *Carolina* and *Virginia* were employed for this Purpoſe, there can be no Doubt of the Succeſs; provided there were proper Care taken in the Burning of the Plant, to make the Pot-aſh: for as to the Growth of both the Plants, which are allowed to be the beſt, I have ſent over their Seeds, which have grown as well in the *Britiſh* Colonies, as in their natural Soil, and in a much leſs time: and there is very little Trouble in the Culture of theſe Plants; for the Seeds muſt be ſown where the Plants are to remain: if they are ſown in the Spring, the Plant will be fit to cut in nine or ten Weeks; ſo the only thing to be obſerved in the Culture of it is, not to ſuffer Weeds to grow among the Plants; for where this happens, the Weeds will be cut with the Herb, and it will then be difficult to ſeparate them; ſo that if they are burnt with the Plant, it will greatly leſſen the Value of the Pot-aſh. The not regarding of this, I fear, has been a great Detriment to the Inhabitants of *America*, by leſſening the Value of ſeveral Commodities, and particularly the Indigo.

KARATAS, The Penguin or wild Ananas.

The *Characters* are;

It hath a tubulous bell-ſhaped Flower, which is divided into three Parts at the Mouth, from whoſe Calyx *ariſes the Pointal, fixed like a Nail in the hinder Part of the Flower; which afterward becomes a fleſhy almoſt conical Fruit, which is divided by Membranes into three Cells, that are full of oblong Seeds.*

There is but one Sort of this Plant at preſent known; which is,

KARATAS *foliis altiſſimis, anguſtiſſimis & aculeatis. Plum. Nov. Gen.* The wild Ananas or Penguin.

Father *Plumier* has made a great Miſtake in the Figure and Deſcription of the Characters of this Plant, and the *Caraguata*; for he has joined the Flower of the *Caraguata* to the Fruit of the *Karatas*, and *vice verſa*; and this has led many Perſons into Miſtakes; who have joined the *Bromelia* and *Ananas* to this Genus, making them all of the ſame Genus; whereas, by their Characters, they ſhould be ſeparated.

This Plant is very common in the *Weſt-Indies*, where the Juice of its Fruit is often put into Punch, being of a ſharp acid Flavour. There is alſo a Wine made of the Juice of this Fruit, which is very ſtrong; but it will not keep good very long; ſo is only for preſent Uſe. This Wine is very intoxicating, and heats the Blood; therefore ſhould be drank very ſparingly.

In *England* this Plant is preſerved as a Curioſity; for the Fruit ſeldom arrives to any Degree of Perfection in this Country; tho' it has often produced Fruit in *England*, which ſometimes has ripened pretty well: but if it were to ripen as thoroughly here, as in its native Country, it would be little valued on account of its great Auſterity; which will often take the Skin off from the Mouths and Throats of thoſe People, who eat it incautiouſly.

This Plant is propagated by Seeds; for tho' there are often Suckers ſent forth from the old Plants, yet they, coming between the Leaves, are ſo long, ſlender, and ill-ſhapen, that if they are planted, they ſeldom make regular Plants. Theſe Seeds ſhould be ſown early in the Spring, in ſmall Pots filled with light rich Earth, and plunged into an Hot bed of Tanners Bark. When the Plants are ſtrong enough to tranſplant, they ſhould be carefully taken up, each planted into a ſeparate Pot filled with light rich Earth, and plunged into the Hot-bed again; obſerving to refreſh them frequently with Water, until they have taken new Root: after which time they ſhould have Air and Water in proportion to the Warmth of the Seaſon. In this Bed the Plants may remain till *Michaelmas*; at which time they ſhould be removed into the Stove, and plunged into the Bark-bed, where they ſhould be treated in the ſame manner as the Ananas.

Theſe Plants will not produce their Fruit in *England*, until they are three or four Years old; ſo they ſhould be ſhifted into larger Pots, as the Plants advance in their Growth; for if their Roots are too much confined, they will make but little Progreſs. They ſhould alſo be placed at a pretty great Diſtance from each other; for their Leaves will be three or four Feet long; which, turning downward, occupy a large Space.

The Leaves of this Plant are ſtrongly armed with crooked Spines, which renders it very troubleſome to ſhift or handle the Plants; for the Spines catch hold of whatever approaches them by their crooked Form; being ſome bent one Way, and others the reverſe; ſo that they catch both Ways, and tear the Skin or Cloaths of the Perſons who handle them, where there is not the greateſt Care taken of them.

The Fruit of this Plant is produced in Cluſters, growing upon a Stalk about three Feet high; and, having generally a Tuft of Leaves growing on the Top, has, at firſt Sight, the Appearance of a Pine-apple; but when cloſer viewed, they will be found to be a Cluſter of oblong Fruit, each being about the Size of a Finger.

KEMPFERIA.

This Title was given to this Plant by Dr. *Linnæus*, in Honour of Dr. *Kempfer*, a *German* Phyſician, who has figur'd and deſcrib'd this Plant, in his Book intituled *Amœnitatum Exoticarum*. This Name was applied to another Plant by the late Dr. *Houſtoun*, which has ſince been referred to the Genus of *Veronica*.

The *Characters* are;

The Flower conſiſts of one Leaf, having a long ſlender Tube; but is ſpread open at the Top, and is divided into ſix Parts; three of the Segments ſtanding upward, the other three hang down, ſo as to appear at firſt like a lipp'd Flower: in the Bottom of the Flower is ſituated the Pointal, attended by a ſingle Stamen: *the Pointal afterward changes to a roundiſh Fruit having three Cells, containing ſeveral roundiſh Seeds.*

We know but one *Species* of this Plant; *viz.*

KEMPFERIA. *Lin. Hort. Cliff.* There has been no *Engliſh* Name applied to this Plant. It is by ſome called *Aro-orchis*; by others it has been ranged with the *Colchicum*; and in the *Hortus Malabaricus* it is intitled *Katsjula Kelengu*; and by Dr. *Kempfer* it is called *Wanboom*.

This Plant is a Native in the *Eaſt-Indies*, where the Root is greatly uſed in Medicine, as a Sudorific; and it is reckoned carminative. It hath much the Scent of green Ginger, when taken out of the Ground; the Roots are divided into ſeveral fleſhy Tubers, which are ſometimes jointed, and grow about four or five Inches long: the Leaves are oval, being about four Inches long, and two broad: theſe are without Footſtalks, growing cloſe to the Root, and ſeem as if ſet on by Pairs, ſpreading open each Way: and from between theſe Leaves, the Flowers are produced ſingly, having no Footſtalks; but are cloſely embraced by the Leaves: the Flowers are white, having a bright purple Bottom. Theſe are not ſucceeded by any Fruit in *England*.

This Plant, being a Native of hot Countries, will not bear the open Air in this Climate; ſo requires a warm Stove to preſerve it thro' the Winter: but as the Leaves decay in Autumn, the Plants ſhould not have too much Wet while they are in an unactive State. If theſe Plants are placed in the Bark-ſtove, and treated in the ſame manner as is directed for the Ginger, they will thrive, and produce plenty of Flowers every Summer. It is propagated by parting of the Roots: the beſt time for this is in the Spring, juſt before they begin to put out their Leaves.

KETMIA. It is commonly call'd *Althæa arboreſcens*, or *Althæa frutex*.

The *Characters* are;

The Flower hath a double Empalement, and conſiſts of one Leaf, which is cut into five Parts, and expands like that of the Mallow: in the Centre of the Flower ariſes the Pointal, like a Column, having a great Number of Stamina, *which coaleſce to the Column: the Pointal afterward changes to a roundiſh Veſſel having five Cells, which are full of roundiſh Seeds.*

The *Species* are;

1. KETMIA *Syrorum, quibuſdam. C. B. Althæa frutex*, with red Flowers.

2. KETMIA *Syrorum, flore purpureo-violaceo. Tourn. Althæa frutex*, with purple Flowers.

3. KETMIA *Syrorum, flore albo. Boerh. Ind. Althæa frutex*, with white Flowers.

4. KETMIA *Syrorum, floribus ex albo & rubro variis. Tour. Althæa frutex*, with ſtriped Flowers

5. KETMIA *Syrorum, foliis ex albo eleganter variegatis. Cat. Plant. Hort. Lond. Althæa frutex*, with ſtriped Leaves.

6. KETMIA *Sinenſis, fructu ſubrotundo, flore ſimplici. Tourn. China* Roſe, *vulgo*.

7. KETMIA *Sinenſis, fructu ſubrotundo, flore pleno. Tourn.* Double *China* Roſe, commonly call'd in the *Weſt-Indies, Martinico* Roſe.

8. KETMIA *Virginienſis, folio inferiori ulmi, ſuperiori aceris. Boerh. Ind. Virginian* Ketmia, with under Leaves like the Elm, and upper Leaves like Maple.

9. KETMIA *Carolinienſis, folio ribeſii, flore amplo flaveſcente, fundo purpureo. Carolina* Ketmia; with Curran-leaves, and an ample yellowiſh Flower, with a purple Bottom.

10. KETMIA *Carolinienſis, folio oblongo magis acuminato, flore amplo purpureo. Carolina* Ketmia, with a long ſharp-pointed Leaf, and an ample purple Flower.

11. KETMIA *Americana, folio papayæ, flore magno flaveſcente, fun-*

do purpureo, fructu erecto pyramidali hexagono, ſemine rotundulo, ſapore fatuo. Boerh. Ind. American Ketmia, with a Papaw-leaf, and a large yellowiſh Flower with a purple Bottom, an hexagonal pyramidal Pod growing upright, and roundiſh Seeds.

12. KETMIA *Indica, vitis folio ampliore. Tourn. Indian* Ketmia, with an ample Vine-leaf.

13 KETMIA *Ægyptiaca, ſemine moſchato. Tourn. Egyptian* Ketmia, with Seeds ſmelling like Muſk, commonly call'd in the *Weſt-Indies,* Muſk-ſeed.

14. KETMIA *Indica aculeata, foliis digitatis. Tourn. Indian* Ketmia, with rough-finger'd Leaves.

15. KETMIA *Indica, goſſypii folio, acetoſæ ſapore. Tourn. Capſula ſeminali rubra. Indian* Ketmia, with a Cotton-leaf, whoſe Fruit taſtes like Sorrel, commonly call'd in the *Weſt-Indies, Indian* or Red Sorrel.

16. KETMIA *Indica, goſſypii folio, acetoſæ ſapore, capſula ſeminali albida. Indian* Ketmia, with a Cotton-leaf, and a whitiſh Seed-veſſel, taſting like Sorrel, commonly call'd White Sorrel.

17. KETMIA *Braſilienſis, folio ficus, fructu pyramidato ſulcato. Tourn. Braſil* Ketmia, with a Fig-leaf, and a pyramidal furrowed Fruit, commonly called in the *Weſt-Indies,* Okra.

18. KETMIA *Indica, folio ficus, fructu pentagono recurvo eſculento, graciliore & longiore. Indian* Ketmia, with a Fig-leaf, and a five-corner'd long ſlender eatable Fruit, recurv'd at the Top, commonly call'd in the *Weſt-Indies,* Long Okra.

19. KETMIA *Indica, folio haſtato, fructu duro. Tourn. Indian* Ketmia, with a ſpear-ſhaped Leaf, and an hard Fruit.

20. KETMIA *Ægyptiaca, vitis folio, parvo flore. Tourn. Egyptian* Ketmia, with a Vine-leaf, and a ſmall Flower.

21. KETMIA *Americana aculeata, flore ampliſſimo coccineo. Plum. Cat.* Prickly *American* Ketmia, with a very large ſcarlet Flower.

22. KETMIA *Americana, ampliſſimo folio cordiformi, flore vario. Plum. Cat. American* Ketmia, with a very large heart-ſhaped Leaf, and a variable Flower.

23. KETMIA *Americana fruteſcens, mori folio, flore purpureo. Plum. Cat. American* ſhrubby Ketmia, with a Mulberry-leaf, and a purple Flower.

24. KETMIA *Americana, ampliſſimo folio angulato, fructu hiſpido clypeato. Plum. Cat. American* Ketmia, with a large angular Leaf, and a rough Fruit ſhaped like a Shield.

25. KETMIA *Indica, tiliæ folio. Plum. Cat. Indian* Ketmia, with a Lime-tree-leaf, commonly called the Man-grove-tree in *America.*

26. KETMIA *Indica humilis, folio diſſecto aſpero, flore parvo candido, inſtar jaſmini Hiſpanici explicato, fundo purpuraſcente. Breyn.* Low *Indian* Ketmia, with a rough cut Leaf, and a ſmall white Flower, which, when open, is like the Flower of *Spaniſh* Jaſmine, having a purple Bottom.

27. KETMIA *Indica humilis, folio diſſecto, flore parvo purpureo.* Low *Indian* Ketmia, with a cut Leaf, and a ſmall purple Flower.

28. KETMIA *veſicaria vulgaris. Tourn. Venice* Mallow, or Bladder Ketmia.

29. KETMIA *veſicaria Africana. Tourn. African* Bladder Ketmia.

30. KETMIA *Africana veſicaria, foliis profundius inciſis, vix crenatis. Boerh. Ind. African* Bladder Ketmia, with deeply cut Leaves.

The five firſt Sorts are very hardy

Shrubs, growing to the Height of ſeven or eight Feet, and may be trained up to regular Heads: theſe are very great Ornaments in ſmall Wilderneſs-quarters, when regularly diſpoſed amongſt Plants of the ſame Growth. They produce their Flowers in *Auguſt*; and if the Autumn proves favourable, their Seeds will be ripe ſoon after *Michaelmas*. Theſe are commonly ſold by the Nurſerymen, with other flowering Shrubs, under the Name of *Althæa frutex*; but by the modern Botaniſts they are removed from that Genus, and called by the Name of *Ketmia*, becauſe their Seeds are produced in Veſſels; whereas thoſe of *Althæa* grow in form of Cheeſes, in the ſame manner as thoſe of the common Mallow: but Dr. *Linnæus* has rejected this Name, being *Arabic*, and has given it the Title of *Hibiſcus*, which is the old Name for the Marſh-mallow; as hath been obſerved before under that Article.

Theſe five are not diſtinct Species, but accidental Varieties; but the Flowers of them being of different Colours, when they are intermixed, they make a finer Appearance in the Garden: ſometimes the ſeveral Varieties are by the Nurſery-men grafted on the ſame Plant, which renders them more beautiful when ſo many different-colour'd Flowers are blown upon the ſame Plant together.

Theſe Plants are propagated by Seeds, which ſhould be ſown upon a Bed of rich light Earth in *February* or *March*: and when they come up, they ſhould be conſtantly clear'd from Weeds; and, in dry Weather, often refreſh'd with Water, which will forward their Growth. In theſe Beds they ſhould remain until the ſucceeding Spring: but if the Winter ſhould be ſevere, it will be proper to cover theſe Plants, becauſe, while young, they are ſomewhat tender; but after they have got Strength, they are very hard: in the following *March* they muſt be carefully tranſplanted into Beds of the like Soil, at about ten Inches ſquare each Way, obſerving to water them in dry Weather, as alſo to keep them clear from Weeds: in theſe Beds they may continue two Years, by which time they will ſpread ſo as to meet each other: therefore you muſt, in *March*, remove them either into the Places where they are deſign'd to remain, or into a Nurſery, allowing them three Feet Diſtance, Row from Row, and eighteen Inches aſunder in the Rows; being careful, in takeing them up, not to break or bruiſe their Roots, which would endanger their growing; and, in dry Weather, give them ſome Water, until they have taken Root; and lay ſome Mulch upon the Surface of the Ground, to prevent its drying too faſt; and be careful to cut down the Weeds between them.

As theſe Plants ſend out fleſhy Roots, having but few Fibres, they do not bear tranſplanting well, when they are old, or have ſtood long unremoved; ſo that it is much the beſt to plant thoſe which are about four or five Years old from Seed, than ſuch as are much larger; for if the young Plants are carefully removed, ſcarce any of them will miſcarry; whereas the larger Plants frequently fail, and ſuch of them as grow will never be ſo good Plants as thoſe which are removed young.

The Leaves of theſe Plants are ſeldom produced till very late in the Spring: it is often the Middle of *May* before their Buds ſhew any Signs of Life; ſo that many Perſons have ſuppoſed their new planted Shrubs were dead, and have pulled them out of the Ground: whereas, if they had but obſerved the unremoved Plants, they would have been undeceived.

Theſe Plants may alſo be propagated by Layers, or Suckers taken from the Roots of old Trees: but the latter Method is by no means adviſeable; becauſe the Plants raiſed that way are ſeldom ſo well rooted, and are very ſubject to produce Suckers, whereby the Shrubs are rendered unſightly.

The former Method may be practiſed, in order to preſerve the particular Kinds: but as they are ſo eaſily propagated by Seeds, which generally produce the handſomeſt Plants, and there will be a Chance to obtain different-colour'd Flowers that way; ſo it is generally preferred to any other Method. They will alſo take by Inarching, whereby the ſeveral colour'd Flowers may be obtained upon one and the ſame Tree; and by this Method, that Sort with variegated Leaves may be increaſed. Theſe Shrubs require very little Culture, but only to clear them from Weeds, and to dig the Ground about them every Spring; and if there are any decay'd Branches, they may be at that time cut out; but they will not require any other Pruning.

The ſixth and ſeventh Sorts are tender, coming from a warmer Country: theſe may be propagated by Seeds, which ſhould be ſown on an Hot bed in the Spring; and when they are come up, they ſhould be tranſplanted into another moderate Hot-bed, to bring them forward: after which, they muſt be planted into Pots filled with freſh light Earth, and plunged into an Hot-bed, to encourage their Rooting; and in *June* they may be expoſed to the open Air, in ſome Place where they may be defended from ſtrong Winds: but they muſt be houſed early in Autumn, when they ſhould be placed in a warm Green-houſe, where they will endure the Winter very well, without any artificial Warmth: tho' indeed they will make but very little Progreſs in this Management; nor will they ever produce Flowers, unleſs they are in the ſucceeding Spring placed into a moderate Bark-bed in the Stove, where they will thrive exceedingly; and if a due Proportion of Air be given to them, that they may not draw up too faſt, they will produce Flowers in the Autumn: but unleſs they have the Aſſiſtance of a Fire, they will ſcarcely ripen their Seeds in *England*.

Theſe Plants were originally brought from *China*, where they are greatly admired, not only for their Beauty, but alſo for an odd Circumſtance in their Flowers, which is, their changing Colour at different times of the ſame Day; in the Morning they are white, at Noon red, and in the Evening purple. Theſe Flowers are in Shape ſomewhat like the Hollyhock, but ſeem to be of a ſhort Duration: the double being much preferable to the ſingle, the Seeds of that ſhould be conſtantly ſow'd; for amongſt the Plants produced from Seeds of the double, there will always be ſome ſingle Flowers, as is the Caſe of all double Flowers which produce Seeds. They are known in the *Weſt-Indies*, where they are now in great Plenty, by the Name of *Martinico* Roſe; I ſuppoſe, becauſe the Inhabitants of that Iſland firſt procured the Seeds from the Eaſt, and from thence they have ſince been ſpread into moſt of the other Iſlands.

The eighth, ninth, and tenth Sorts are perennial Plants, which die to the Surface every Winter, and riſe again the ſucceeding Spring: they commonly produce their beautiful Flowers late in Autumn, but rarely perfect Seeds in our Climate. They are propagated by Seeds, which are eaſily propagated from *Virginia* or *Carolina*, where they are in great Plenty. The Seeds ſhould be ſown in *March*, upon a moderate Hot-bed; and when the Plants come up, they ſhould be removed into ſmall Pots filled with light rich Earth, and plunged into another Hot-bed, to bring them forward: and in the Month of *June* they may be expoſed to the open Air, in a well-ſheltered Situation, where they may remain until *October*, when they muſt be removed into Shelter for the Winter-ſeaſon: during which time they will require no farther Care than to be protected from ſevere Froſts; ſo that if they are placed into an Hot-bed-frame, where they may be expoſed to the open Air in mild Weather, and only covered in Froſts, they will do better than when they are placed in the Green-houſe.

In the Spring they may be turned out of the Pots, and planted into the full Ground, under a warm Wall or Pale, where they will thrive much better than in Pots, and will produce their Flowers much larger, and in greater Quantities: tho', if you would obtain Seeds from them, the only Method is, to keep one of each Sort in Pots, which ſhould be plunged into a very moderate Bark-bed in the Stove, giving them a great Share of Air; in which Place they will flower in *June*, and produce ripe Seeds in Autumn.

The eleventh, twelfth, thirteenth, fourteenth, fifteenth, ſixteenth, ſeventeenth, eighteenth, nineteenth, twentieth, twenty-firſt, twenty-ſecond, twenty-third, twenty-fourth, and twenty-fifth Sorts are much tenderer than any of the former: theſe are all propagated by Seeds, which muſt be ſown on an Hot-bed early in the Spring; and when the Plants are come up, they ſhould be treated in the ſame way, as hath been directed for the ſixth and ſeventh Sorts; with this Difference only, that theſe will require a moderate Stove; otherwiſe they will not live thro' the Winter, nor will they thrive well in Summer, if they are expoſed to the open Air.

The eleventh, twelfth, thirteenth, fourteenth, fifteenth, ſixteenth, ſeventeenth, eighteenth, twentieth, twenty-ſixth, and twenty-ſeventh Sorts will produce their Flowers, and ripen their Seeds the firſt Year, if the Plants are raiſed early in the Spring, and afterward placed in the Stove.

Theſe Plants, tho' they may produce Seeds the firſt Year, yet they may be continued two or three Years, if preſerved in a moderate Stove in Winter, and frequently refreſhed with Water: yet ſince they are eaſily raiſed from Seeds, and young Plants are much more ſightly than the old ones, it is hardly worth while to fill a Stove with them, ſince there are ſo many other Sorts that will not flower or ſeed the firſt Year, which will take up all the room there in Winter.

The Flowers of theſe Plants are very beautiful; but are of ſhort Duration, ſeldom continuing longer than one Day; but they are ſucceeded by freſh Flowers, if the Plants are ſtrong and healthy, otherwiſe there is little Pleaſure in them in our Country: but in the *Weſt-Indies*, where they grow in great Plenty, and often ariſe to the Height of a Shrub, they are more productive of

Flowers, and are in great Eſteem amongſt the Inhabitants of thoſe Countries.

The thirteenth Sort is by ſome People valued for the exceeding Sweetneſs of its Seeds; as are the fifteenth and ſixteenth Sotrs for their Seed veſſels, the Juice of which the People of *Barbados*, *Jamaica*, &c. make uſe of, to add a pleaſant Tartneſs to their Viands. And the Pods of the ſeventeenth and eighteenth Sorts are by them put into their Soups, to thicken them. For all which Purpoſes theſe Plants are much cultivated in thoſe Countries; but with us they are preſerved only as Curioſities.

The nineteenth, twenty-firſt, twenty-ſecond, twenty-third, twenty-fourth, and twenty-fifth Sorts riſe to a conſiderable Height, before they produce their Flowers, and are perennial Shrubs: theſe are all very tender; ſo ſhould be placed in the Bark ſtove, where they will make a fine Appearance, as they retain their Leaves all the Year; and when they produce their Flowers, which in ſome of the Species are very large, and fine Colours, they will appear very beautiful, but particularly the twenty fourth and twenty-fifth Sorts, which have large Leaves; and the Flowers of the laſt are of a fine yellow Colour, with a very dark-purple Bottom.

The three laſt Sorts are annual Plants, which are propagated by ſowing their Seeds in *March*, in the Places where they are deſigned to remain; for they generally form downright woody Roots, and ſeldom ſucceed well if tranſplanted, except it be done while the Plants are very young: they delight in a freſh light Soil, and an open Situation; for if they are overſhaded with Trees, they never thrive well, nor produce ſo great a Number of Flowers.

They are very proper Ornaments for the Borders of Pleaſure-gardens, where, being intermixed with other annual Plants, they make an agreeable Variety, and are very hardy, requiring no other Culture than only to ſow their Seeds, and keep them conſtantly clear from Weeds. They produce their Flowers in *June* and *July*, and their Seeds are perfected ſoon after: and tho' their Flowers are of ſhort Duration, ſeldom continuing open above half a Day, which occaſion'd *Gerrard*, in his Herbal, to call them Flowers of an Hour; yet they are every Day ſucceeded by new Flowers, until the Froſt prevents them.

KITCHEN-GARDEN: The Kitchen-garden ſhould always be ſituated on one Side of the Houſe, ſo as not to appear in Sight; but muſt be placed near the Stables, for the Conveniency of Dung; which ought always to be conſidered in the Diſpoſition of the Buildings, and the laying out of the Garden: for if this Garden be placed at a great Diſtance from the Stables, the Labour will be very great in wheeling the Dung; and ſuch Expences ſhould ever be avoided, if poſſible.

As to the Figure of the Ground, that is of no great Moment, ſince in the Diſtribution of the Quarters all Irregularities may be hid; tho', if you are at full Liberty, an exact Square, or an Oblong, is preferable to any other Figure.

The great thing to be conſidered is, to make choice of a good Soil, not too wet, nor over-dry, but of a middling Quality; nor ſhould it be too ſtrong or ſtubborn, but of a pliable Nature, and eaſy to work; and if the Place where you intend

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KIDNEY BEANS V. Phaseolus

to make the Kitchen-garden ſhould not be level, but high in one Part, and low in another, I would by no means adviſe the leveling it; for by this Situation you will have an Advantage which could not be obtained on a perfect Level, which is, the having one Part of dry Ground for early Crops, and the low Part for late Corps, whereby the Kitchen may be the better ſupplied throughout the Seaſon with the various Sorts of Herbs, Roots, *&c.* And in very dry Seaſons, when in the Upper-part of the Garden the Crops will greatly ſuffer with Drought, then the Lower-part will ſucceed, and ſo *vice verſa*; but I would by no means direct the chooſing a very low moiſt Spot of Ground for this Purpoſe; for altho' in ſuch Soils Garden-herbs are commonly more vigorous and large in the Summer-ſeaſon, yet they are ſeldom ſo well taſted or wholſome as thoſe which grow upon a moderate Soil; and eſpecially ſince in this Garden your choice Fruits ſhould be planted, it would be wrong to have a very wet Soil.

This Garden ſhould be fully expoſed to the Sun, and by no means overſhadow'd with Trees, Buildings, *&c.* which are very injurious to your Kitchen-plants and Fruit-trees; but if it be defended from the North Wind by a diſtant Plantation, it will greatly preſerve your early Crops in the Spring; as alſo from the ſtrong South-weſt Winds, which are very hurtful in Autumn to Fruit and Garden-herbs.

The Quantity of Ground neceſſary for a Kitchen-garden muſt be proportion'd to the Largeneſs of the Family, or the Quantity of Herbs deſired: for a ſmall Family, one Acre of Ground may be ſufficient; but for a large Family, there ſhould not be leſs than three or four Acres; becauſe, when the Ground is regularly laid out, and planted with Eſpaliers of Fruit-trees, as will hereafter be directed, this Quantity will be found little enough, notwithſtanding what ſome Perſons have ſaid on this Head.

This Ground muſt be wall'd round; and if it can be conveniently contrived, ſo as to plant both Sides of the Walls, which have good Aſpects, it will be a great Addition to the Quantity of Wall-fruit; and thoſe Slips of Ground, which are without-ſide of the Walls, will be very uſeful for planting of Gooſberries, Currans, Strawberries, and ſome Sorts of Kitchen-plants; ſo that they may be rendered equally uſeful with any of the Quarters within the Walls: but theſe Slips ſhould not be too narrow, leſt the Hedge or Pale which incloſes them ſhould ſhade the Borders where the Fruit-trees ſtand; the leaſt Width of theſe Slips ſhould be twenty Feet; but if they are double that, it will be yet better, and the Slips will be more uſeful; and the Fruit-trees will have a larger Scope of good Ground, for their Roots to run. Theſe Walls ſhould be built about twelve Feet high, which will be a ſufficient Height for any Sort of Fruit. If the Soil where you intend to place your Kitchen-garden be very ſtrong, then you ſhould plow or dig it three or four times before you plant any thing therein; and if you throw it up in Ridges, to receive the Froſt in Winter, it will be of great Service to meliorate and looſen its Parts.

The Manure which is moſt proper for ſuch Soils, is Sea-coal Aſhes, and the Cleanſing of Streets or Ditches, which will render it light much ſooner than any other Dung or Manure; and the greater the Quantity of

Aſhes, the better, eſpecially if the Ground be cold; and where theſe Aſhes are not to be obtained in plenty, Sea ſand is very proper, or rotten Wood; or the Parts of Vegetables rotted are very good, all which will greatly looſen the Soil, and cauſe it to be not only eaſier to work, but alſo more advantageous for the Growth of Plants.

But, on the contrary, if your Soil be light and warm, you ſhould manure it with rotten Neats-dung, which is much preferable to any other, for hot Soils; but if you uſe Horſe-dung, it muſt be well rotted, otherwiſe it will burn up the Crops, upon the firſt hot dry Weather.

The Soil of this Garden ſhould be at leaſt two Feet deep; but if deeper, it will be ſtill better, otherwiſe there will not be Depth enough for many Sorts of eſculent Roots, as Carrots, Parſneps, Beets, *&c.* which run down pretty deep in the Ground; and moſt other Sorts of eſculent Plants delight in a deep Soil: and many Plants, whoſe Roots appear ſhort, yet if their Fibres, by which they receive their Nouriſhment, are traced, they will be found to extend to a conſiderable Depth in the Ground; ſo that when theſe are ſtopped by meeting with Gravel, Chalk, Clay, *&c.* the Plants will ſoon ſhew it, by their Colour, and ſtinted Growth.

You ſhould alſo endeavour to have a Supply of Water in the different Parts of the Garden, which, if poſſible, ſhould be contained in large Baſins or Reſervoirs, where it may be expoſed to the open Air and Sun, that it may be ſoftened thereby; for ſuch Water as is taken out of Wells, *&c.* juſt as it is uſed, is by no means proper for any Sort of Plants.

In the Diſtribution of this Garden, after having built the Walls, you ſhould lay out Banks or Borders under them, which ſhould be at leaſt eight or ten Feet broad, whereby the Roots of the Fruit-trees will have greater Liberty than in ſuch Places where the Borders are not above three or four Feet wide; and upon theſe Banks you may ſow many Sorts of early Crops, if expoſed to the South; and upon thoſe expoſed to the North, you may have ſome late Crops: but I would by no means adviſe the planting any Sort of deep-rooting Plants too near the Fruit-trees; eſpecially Peas and Beans; tho', for the Advantage of the Walls, to preſerve them in Winter, and to bring them forward in the Spring, the Gardeners in general are too apt to make uſe of thoſe Borders, which are by the beſt aſpected Walls, to the great Prejudice of their Fruit-trees; but for theſe Purpoſes it is much better to have ſome Reed-hedges fixed in ſome of the warmeſt Quarters, under which you ſhould ſow and plant early Peas, Beans, *&c.* where they will thrive as well as if planted under a Wall; and hereby your Fruit-trees will be intirely freed from ſuch troubleſome Plants.

Then you ſhould proceed to dividing the Ground out into Quarters, which muſt be proportion'd to the Largeneſs of the Garden; but I would adviſe, never to make them too ſmall, whereby your Ground will be loſt in Walks; and the Quarters being incloſed by Eſpaliers of Fruit-trees, the Plants therein will draw up ſlender, and never arrive to half the Size as they would do in a more open Expoſure.

The Walks of this Garden ſhould be alſo proportion'd to the Size of the Ground, which in a ſmall Garden ſhould be ſix Feet, but in a large one ten; and on each Side of the Walk ſhould be allow'd a Border three or four Feet wide between the Eſpalier and the Walk, whereby the Diſtance between the Eſpaliers will be greater, and the Borders being kept conſtantly work'd and manur'd, will be of great Advantage to the Roots of the Trees; and in theſe Borders may be ſown ſome ſmall Sallad, or any other Herbs, which do not continue long, or root deep; ſo that the Ground will not be loſt.

The Breadth of theſe middle Walks, which I have here aſſigned them, may by many Perſons be thought too great; but my Reaſon for this is to allow proper room between the Eſpaliers, that they may not ſhade each other, or their Roots interfere, and rob each other of their Nouriſhment: but where the Walks are not required of this Breadth, it is only inlarging of the Borders on each Side, and ſo reducing the Walks to the Breadth deſired.

But the Walks of theſe Gardens ſhould not be gravell'd; for as there will conſtantly be Occaſion to wheel Manure, Water, *&c.* upon them, they would ſoon be defac'd, and render'd unſightly; nor ſhould they be laid with Turf; for in green Walks, when they are wheeled upon, or much trodden, the Turf is ſoon deſtroyed; and thoſe Places, where they are much uſed, become very unſightly alſo: therefore the beſt Walks for a Kitchen-garden are thoſe which are laid with a binding Sand; but where the Soil is ſtrong, and apt to detain the Wet, there ſhould be ſome narrow under-ground Drains made by the Side of the Walks, to convey off the Wet; otherwiſe there will be no uſing of the Walks in bad Weather: and where the Ground is wet, if ſome Lime-rubbiſh, Flints, Chalk, or any ſuch Material as can be procured with the leaſt Expence, is laid at the Bottom of theſe Walks, and the Coat of Sand laid over it, the Sand will be kept drier, and the Walks will be found in all Seaſons: theſe Sand-walks are by much the eaſieſt kept of any; for when either Weeds or Moſs begin to grow, it is but ſcuffling them over with a *Dutch* Hoe in dry Weather, and raking them over a Day or two after, and they will be as clean as when firſt laid.

The beſt Figure for the Quarters to be diſpoſed into, is a Square, or an Oblong, where the Ground is adapted to ſuch a Figure; otherwiſe they may be triangular, or of any other Shape, which will be moſt advantageous to the Ground.

When the Garden is laid out in the Shape intended, if the Soil is ſtrong, and ſubject to detain the Moiſture, or is naturally wet, there ſhould always be under-ground Drains made, to convey off the Wet from every Quarter of the Garden: for otherwiſe moſt Sorts of Kitchen-plants will ſuffer greatly by Moiſture in Winter: and if the Roots of the Fruit-trees get into the Wet, they will never produce good Fruit; ſo that there cannot be too much care taken to let off all ſuperfluous Moiſture from the Kitchen-garden.

Theſe Quarters ſhould be conſtantly kept clear from Weeds; and when any Part of the Ground is unoccupied, it ſhould always be trenched up into Ridges, that it may ſweeten, and imbibe the nitrous Particles of the Air, which is of great Advantage to all Sorts of Land; and the Ground will then be ready to lay down, whenever it is wanted.

The Ground in theſe Quarters ſhould not be ſown or planted with the ſame Crops two Years together: but the Crops ſhould be annually changed, whereby they will prove much better than when they conſtantly grow upon the ſame Spot. Indeed the Kitchen-gardeners near *London*, where Land is dear, are often obliged to put the ſame Crop upon the Ground for two or three Years together; but then they dig and manure their Land ſo well every Year, as to render it almoſt new: tho', notwithſtanding all this, it is conſtantly obſerved, that freſh Land always produces the beſt Crops.

If one of theſe Quarters, which is ſituated neareſt to the Stables, and beſt defended from the cold Winds; or if either of the Slips without the Garden-wall, which is well expoſed to the Sun; lies convenient, and is of a proper Width; that ſhould be preferr'd, for a Place to make Hot-beds for early Cucumbers, Melons, *&c.* The Reaſons for my giving the Preference to one of theſe Slips, is, firſt, there will be no Dirt or Litter carried over the Walks of the Kitchen-garden in Winter and Spring, when the Weather is generally wet; ſo that the Walks will be rendered unſightly: ſecondly, the View of the Hot-beds will be excluded from Sight; and laſtly, the Convenience of carrying the Dung into theſe Slips; for by making of a Gate in the Hedge or Pale, wide enough for a ſmall Cart to enter, it may be done with much leſs Trouble than that of barrowing it thro' the Garden: and where there can be a Slip long enough to contain a ſufficient Number of Beds for two or three Years, it will be of great Uſe, becauſe by the Shifting of the Beds annually they will ſucceed much better than when they are continued for a Number of Years on the ſame Spot of Ground. As it will be abſolutely neceſſary to fence this Melon-ground with a Reed-hedge, it may be ſo contrived as to move away in Panels; and then that Hedge which was on the Upper-ſide the firſt Year, being carried down to a proper Diſtance below that which was the lower Hedge, and which may remain, there will be no occaſion to remove more than one of the croſs Hedges in a Year; therefore I am perſuaded, whoever will make Trial of this Method, will find it the moſt eligible.

The moſt important Points of general Culture conſiſt in well digging and manuring the Soil, and giving a proper Diſtance to each Plant, according to their different Growths (which is conſtantly exhibited in their ſeveral Articles in this Book), as alſo in keeping them clear from Weeds; for if Weeds are permitted to grow until their Seeds are ripe, they will ſhed upon the Ground, and fill it ſo as not to be gotten out again in ſeveral Years. You ſhould alſo obſerve to keep your Dunghils always clear from Weeds; for it will be to little Purpoſe to keep the Garden clean, if this is not obſerved; for the Seeds, falling among the Dung, will be brought into the Garden, whereby there will be a conſtant Supply of Weeds yearly introduced, to the no ſmall Damage of your Plants, and a perpetual Labour occaſioned to extirpate them again. As for all other neceſſary Directions, they will be found in the Articles of the ſeveral Sorts of *Kitchen-garden Plants*; which renders it needleſs to be repeated in this Place.

KIGGELARIA.

This Name is applied to this Genus by Dr. *Linnæus*, in Honour to the Memory of *Francis Kiggelar*, who was the Superintendant of the curious Garden of Plants belonging to Mr. *Beaumont* in *Holland*.

The *Characters* are;

It is Male and Female in diſtinct Plants: the Empalement of each Sex conſiſts of one Leaf, which is cut into five concave Segments: the Flowers of each Sex are compoſed of five Leaves, and are ſhaped like a Pitcher: the Male Flowers have in their Centre an obtuſe Gland, having three Lobes, the middle one being large, depreſſed, and coloured: this is fixed to the Bottom of the Petals, and is attended by ten ſmall Stamina: *the Female Flowers have a roundiſh Pointal, ſupporting five Styles in their Centre, which afterward changes to a rough ſpherical Fruit, opening in five Parts, and having one Cell, which is filled with angular Seeds.*

The *Species* are;

1. Kiggelaria *mas. Lin. Hort. Cliff.* Male Kiggelaria.
2. Kiggelaria *fœmina. Lin. Hort. Cliff.* Female Kiggelaria.

Theſe two Varieties are produced from the ſame Seeds; ſo muſt not be deemed as diſtinct Species: but it is the Male Sort which is the moſt common in the *Engliſh* Gardens, the other being very rare at preſent.

This Plant has been many Years preſerved in ſome of the curious Gardens of Plants; and has been known by the Title of *Euonymo affinis Æthiopica ſempervirens, fructu globoſo ſcabro, foliis ſalicis rigidis ſerratis*, or ever-green baſtard Spindle-tree of *Ethiopia*, with a rough globular Fruit, and ſtiff Willow-leaves ſawed on their Edges: but we have no proper *Engliſh* Name for it.

This grows to be a Tree, with a ſtrait woody Stem, ten or twelve Feet high, having a regular Head: the Branches are garniſhed with oblong ſtiff Leaves, which are ſhaped ſomewhat like thoſe of the long-leav'd Mountain-willow, which are ſawed on their Edges: and tho' it is called an Ever-green, yet in the Spring of the Year theſe Leaves fall off a little before the new Leaves put out; ſo that for a Month or more the Trees are deſtitute of Leaves, or at leaſt have very few remaining on them. The Flowers, which are of a yellowiſh Green, are produced in *July*, and the Fruit is formed ſoon after; but the Seeds are not perfected in *England*.

This Tree came originally from *Ethiopia*; ſo is too tender to live thro' the Winter in this Country in the open Air; but it only requires to be protected from hard Froſts; ſo that the ſame Green-houſe, where Myrtles and other hardy Plants are kept in Winter, will preſerve this Plant; and it may be removed into the open Air, at the ſame time when they are, and treated in the ſame manner.

It may be propagated by laying down of the tender Shoots; but theſe are commonly two Years before they are rooted enough to be taken from the old Plants. I have alſo raiſed a few of the Plants from Cuttings, which were planted in the Autumn; but theſe were upward of a Year before they were rooted, and there were but few which ſucceeded with me, tho' I have planted many of theſe Cuttings at different Seaſons.

KLEINIA.

The Title of this Genus of Plants was given to it by Dr. *Linnæus* in Honour to the Noble *J. Th. Klein* of *Dantzick*, who was a great Cultivator of rare Plants.

The *Characters* are;

It hath a compound Flower compoſed of ſeveral hermaphrodite Flowers, which are incloſed in one common cylindrical Empalement, which is *ſquamoſe: the Flowers are tubulous, and are extended a little above the Empalement, where they are cut into five Segments: in the Centre of each is ſituated the Pointal, attended by five* Stamina: *the Pointal afterward changes to an oblong Seed crown'd with long Down.*

The *Species* are;

1. KLEINIA *foliis lanceolatis planis, caule lævi ventricoſo. Lin. Hort. Cliff.* Kleinia with plain ſpear-ſhaped Leaves, and a ſmooth ſwelling Stalk.

2. KLEINIA *foliis carnoſis planis ovato-oblongis. Lin. Hort. Cliff.* Kleinia with oblong oval plain fleſhy Leaves, commonly called *Anteuphorbium.*

3. KLEINIA *foliis carnoſis lanceolatis compreſſis, caule tereti. Lin. Hort. Cliff.* Kleinia with fleſhy ſpear-ſhaped Leaves, which are compreſſed, and a taper Stalk, commonly called *African* Groundſel-tree, with a Ficoides-leaf.

4. KLEINIA *caule petiolis truncatis obvallato. Lin. Hort. Cliff.* Kleinia with a Stem full of Protuberances.

The firſt Sort has been long preſerved in many curious Gardens in different Parts of *Europe:* it is a Native of the *Canary* Iſlands, and was firſt deſcribed under the Title of *Arbor lavendulæ folio, i. e.* a Tree with a Lavender-leaf. It was afterwards titled by ſome a *Linaria,* and by others a *Crithmum*; but Dr. *Dillenius,* who brought theſe Plants together under one Genus, gave it the Title of *Cacalianthemum,* from a Similitude between the Flowers of theſe Plants, and thoſe of the *Cacalia*; ſo that in different Countries this firſt Species has paſſed under different Appellations; and by ſome of the *Engliſh* Gardeners has been called the Cabbage-tree; which Name, I ſuppoſe, was given it, from a Reſemblance, which they imagined, between the Stem of this Plant, and that of the Cabbage: by others I have heard it called the Carnation-tree, but for what Reaſon I never could learn; ſo that I do not know any proper *Engliſh* Name for this Plant.

This Sort will grow to the Height of ten or twelve Feet in *England*; but I ſuppoſe, in its native Country, it is of much greater Growth. The Stems are rather fleſhy than woody, and grow deformed, having crooked Knees, at the End of each Year's Growth; and each of theſe Joints, or Shoots, ſwell with a Belly in the Middle. Theſe Shoots or Branches are naked all their Length, except toward their Top, where they are garniſhed with long narrow pale-green Leaves, which are produced without any Order, on every Side of the Branches: and from between the Cluſter of Leaves at the Extremity of the Shoots, the Flowers are produced in large Cluſters, which are of a pale or yellowiſh-green Colour. Theſe generally appear in the Autumn, at which Seaſon theſe Plants put out new Leaves, and are in their greateſt Vigour.

The ſecond Sort has alſo been long preſerved in Gardens, by the Title of *Anteuphorbium*; under which Name it hath been figured and deſcribed by ſeveral antient Authors, from a ſuppoſed Virtue in this Plant, of abating the cauſtic Quality of *Euphorbium*: but as this Plant had not produced any Flowers in *Europe,* till of late, that one of theſe Plants flowered in the Garden of his Grace the Duke of *Beaufort,* at *Badmington*; ſo the Botaniſts were at a loſs to know under what Genus to range it: but by the Flowers there produced, it appeared to agree with thoſe

thoſe of this Genus, where it is now placed.

This Plant ſends out a great Number of fleſhy Branches, which are about the Thickneſs of a Finger, and grow very luxuriant and irregular; ſo that there is no training of it up to one Stem. Theſe Branches are naked below, but toward their Upper-part are garniſh'd with Leaves which come out alternately on every Side of the Branches. Theſe are oval and fleſhy, ſmooth on their Edges, where they are waved; as the Shoots extend in Length, ſo the lower Leaves decay, and drop off: the whole Plant, if encouraged, will grow very luxuriant and rude; therefore the Roots ſhould be confined in the Pots, and the Soil in which they are planted ſhould be lean and dry.

The third Sort was firſt introduced into the *Engliſh* Gardens as one Species of Ficoides; but after it had produced Flowers, it was by ſeveral Botaniſts ranged in the Genus of *Senecio*, or Groundſel; and has ſince paſſed in common amongſt the Gardeners, by the Name of *African* Groundſel-tree, with a Ficoides-leaf: but, upon a nicer Examination of the Flower, it is found to agree with thoſe Characters aſcribed to this Genus.

This Sort has many round taper Stems, which are very ſucculent, and are produced without Order: theſe branch out on every Side from the Bottom; ſo that it is abſolutely neceſſary to cut off many of theſe annually, to keep the Plants within Compaſs. Theſe Branches are garniſhed with fleſhy taper Leaves, which are five or ſix Inches long, ſomewhat compreſſed, and ending in a Point. Theſe Leaves are covered with a glaucous Flue, which wipes off; and when the Leaves are broken, the thick Juice contained within has a ſtrong terebinthinous Scent: at the Extremity of the Shoots, the Flowers are produced in Cluſters, which are white.

The Leaves of this Plant are, by ſome of the Nobility in *France*, pickled: in the doing of which they preſerve their glaucous Colour, which renders them ornamental on the Table. This Sort commonly flowers in the Autumn and Winter.

The fourth Sort is at preſent rare in *England:* this approaches nearer in Form to the firſt, than any of the other Species; but the Stem of this is all over full of *Papillæ*, or Protuberances: the Leaves are alſo much narrower than thoſe of the firſt; but, in other reſpects, there is great Similitude between them. The Leaves of this Sort generally decay, and fall off, in the Spring; ſo that, during the Summer-ſeaſon, the Plants are quite naked: but in the Autumn the new Leaves are put out, which flouriſh all the Winter, when the Plants make their annual Shoots.

All theſe Plants are eaſily propagated by Cuttings; but the beſt Seaſon for planting of the Cuttings of the firſt and fourth Sorts is toward the End of *July*, or the Beginning of *Auguſt;* which is a little before theſe Plants begin to ſhoot: but as theſe Cuttings are very ſucculent, they ſhould be taken off a Fortnight or three Weeks before they are planted, during which time they ſhould be laid in the Green-houſe, that the Part where they were cut may dry, and heal over, otherwiſe they are apt to rot: in the taking off theſe Cuttings, it ſhould always be at a Joint; for theſe will more ſurely ſucceed, than thoſe which are cut at random.

When theſe are planted, they ſhould be each put into a ſeparate ſmall Pot filled with light ſandy Earth, and placed in the Shade for a Fortnight or three Weeks, giving them a little Water two or three times a Week; after this if the Pots are plunged into a very moderate Hot bed, it will promote their takeing Root.

The Cuttings of the other two Sorts may be planted during any of the Summer-months, obſerving to cut them off ſome time before they are planted; but theſe may be planted in an open Bed of common Earth, where they will take Root, and may afterward be taken up and potted: but if the Cuttings of the ſecond Sort are permitted to remain long in the full Ground, the Plants will grow ſo very luxuriant, as to render them not only unſightly, but alſo difficult to remove.

Theſe Plants muſt be houſed in Winter, otherwiſe they cannot be preſerved in *England:* if they are placed in an airy Glaſs-caſe, with Ficoides, Sedums, and other ſucculent Plants, where they may be ſecured from Froſt, and have as much free Air as poſſible in mild Weather, they will thrive better than in a common Green-houſe, which is often too damp for theſe Plants, eſpecially the firſt and fourth Sorts, which are ſoon injured by the Damps, their Leaves growing mouldy, and this often affects their Stems: but the other two Sorts will thrive in any good Green-houſe. Theſe muſt be expoſed abroad in the Summer, in a ſheltered Situation.

KNAUTIA.

This Name was applied to this Plant by Dr. *Linnæus*, in Honour to the Memory of Dr. *Chriſtian Knaut*, who publiſhed a Method of claſſing Plants.

The *Characters* are;

It hath ſeveral floſcular Flowers incloſed in one common cylindrical Empalement: theſe ſeveral Floſcules have their Petals ranged ſo as to appear a regular Flower; but each ſeparate Floſcule is irregular, conſiſting of one Leaf, which is tubulous, but ſpread open at the Top, where it is cut into four Segments, the outer one being the largeſt: in the Bottom of each Floret is ſituated the Pointal, attended by four long Stamina; *the Pointal afterward changes to a ſingle oblong naked Seed.*

There is but one *Species* of this Plant at preſent known; *viz.*

Knautia. *Lin. Hort. Cliff* This Plant is very near akin to the Scabious, under which Genus it has been ranged by ſeveral Botaniſts; but the Appearance of the Flower at firſt Sight being like a Lychnis, Dr. *Boerhaave* ſeparated it from the Scabious, and gave it the Title of *Lychni-ſcabioſa*, which being a compound Name, Dr. *Linnæus* has altered it to this of *Knautia.*

This is an annual Plant: the Seeds of it were brought from the *Archipelago*, where it is a Native; but when it is allowed to ſcatter its Seeds in a Garden, it will propagate itſelf in as great Plenty as if it were a Native of *England:* and theſe autumnal Plants, which ariſe from the ſcattered Seeds, will grow much ſtronger than thoſe which are ſown in the Spring. All the Culture this Plant requires is, to keep it clear from Weeds; for it will thrive on almoſt any Soil, or in any Situation.

KNIGHTS-CROSS, or SCARLET CROSS, is the Scarlet Lychnis. *Vide* Lychnis.

L A

LABLAB. *Vide* Phaſeolus.

LABRUM VENERIS. *Vide* Dipſacus.

LABRUSCA. *Vide* Vitis.

LABURNUM. *Vide* Cytiſus.

LACRYMA JOBI, Job's Tears. *Vide* Coix.

LACTUCA, Lettuce.

The *Characters* are;

It hath a fibroſe Root, which is, for the moſt part, annual: the Leaves are ſmooth, and grow alternately upon the Branches: the Stalks are, for the moſt part, ſlender and ſtiff, and commonly terminate into a ſort of Umbel: the Cup of the Flower is oblong, ſlender, and ſcaly: the Seeds are oblong, depreſs'd, and generally terminate in a Point.

It would be beſide my Purpoſe to mention in this Place the ſeveral Sorts of Lettuce that are to be found in Botanic Writers, many of which are Plants of no Uſe, and are never cultivated but in Botanic Gardens for Variety; and ſome of them are found wild in many Parts of *England*. I ſhall therefore paſs over thoſe here, and only mention the ſeveral Sorts which are cultivated in the Kitchen-garden for Uſe: 1. *Common* or *Garden-lettuce*. 2. *Cabbage-lettuce*. 3. Cilicia *Lettuce*. 4. Dutch *Brown Lettuce*. 5. Aleppo *Lettuce*. 6. *Imperial Lettuce*. 7. *Green Capuchin Lettuce*. 8. Verſailles or *Upright White* Cos *Lettuce*. 9. *Black* Cos. 10. *White* Cos. 11. *Red Capuchin Lettuce*. 12. Roman *Lettuce*. 13. *Prince-lettuce*. 14. *Royal Lettuce*. 15. Egyptian Cos *Lettuce*.

The firſt of theſe Sorts is commonly ſown very young, for cutting, to mix with other ſmall Sallad-herbs, and is only different from the ſecond Sort, in being a Degeneracy therefrom; or otherwiſe the ſecond is an Improvent by frequent Cultivation from the firſt: for if the Seeds are ſaved from ſuch Plants of the ſecond Sort as did not cabbage cloſely, the Plants produced from that Seed will all degenerate to the firſt Sort; which is by the Gardeners called Laped-lettuce, to diſtinguiſh it from the other, which they call Cabbage-lettuce. The Seeds of the firſt, which are commonly ſaved from any of the Plants, without having regard to their Goodneſs, are generally ſold at a very cheap Rate (eſpecially in dry Seaſons, when theſe Plants always produce the greateſt Quantity of Seeds); though ſometimes this Seed is ſold in the Seed ſhops, and by Perſons who make a Trade of ſelling Seeds, for the Cabbage-lettuce; which is often the Occaſion of Peoples being diſappointed in their Crop: ſo that this Sort ſhould never be cultivated but to be cut up very young; for which Purpoſe this is the only good Sort, and may be ſown any time of the Year; obſerving only in hot Weather to ſow it on ſhady Borders; and in the Spring and Autumn upon warm Borders; but in Winter it ſhould be ſown under Glaſſes, otherwiſe it is ſubject to be deſtroy'd by ſevere Froſts.

The Cabbage-lettuce may alſo be ſown at different times of the Year, in order to have a Continuation of it thro' the whole Seaſon. The firſt Crop is generally ſown in *February*; which ſhould be upon an open warm Spot of Ground; and when the Plants are come up, they ſhould be thinn'd out, to the Diſtance of ten Inches each Way; which may be done by hoeing them out, as is practis'd for Turneps, Carrots, Onions, *&c.* provided you have no Occaſion for the ſuperfluous Plants; otherwiſe they may be drawn up, and tranſplanted into another Spot of good Ground at the ſame Diſtance; which if done before the Plants are too large, they will ſucceed very well, though they will not be ſo large as thoſe which were left upon the Spot where they were ſown; but they will come ſomewhat later, which will be of Service, where People do not continue ſowing every Month.

You muſt alſo obſerve in ſowing the ſucceeding Crops, as the Seaſon advances, to chooſe a ſhady moiſt Situation, but not under the Drip of Trees; otherwiſe, in the Heat of Summer, they will run up to Seed before they cabbage. In the Beginning of *Auguſt* you ſhould ſow the laſt Crop, which is to ſtand over Winter; and ſhould be ſown thin upon a good light Soil, in a warm Situation; and when the Plants are come up, they muſt be hoed out, ſo as to ſtand ſingly, and cut down all the Weeds to clear them. In the Beginning of *October* they ſhould be tranſplanted into warm Borders; where, if the Winter is not very ſevere, they will ſtand very well: but in order to be ſure of a Crop, it will be adviſeable to plant a few upon a Bed pretty cloſe, where they may be arched over with Hoops; and in ſevere Froſts they ſhould be cover'd with Mats, and Straw, or Peas-haulm, to ſecure them from being deſtroy'd; and in the Spring of the Year they may be tranſplanted out into a warm rich Soil, at the Diſtance before-mentioned; but ſtill thoſe which grew under the Wall, if they eſcaped the Winter, and were ſuffered to remain, will cabbage ſooner than thoſe which are removed; but you muſt obſerve not to place them too cloſe to the Wall, which would occaſion their growing up tall, and prevent their being large or hard.

In order to ſave good Seeds of this Kind, you ſhould look over your Lettuces when they are in Perfection; and ſuch of them as are very hard, and grow low, ſhould have Sticks thruſt into the Ground, by the Sides of as many of them as you intend for Seed, to mark them from the reſt; and you ſhould carefully pull up all the reſt from amongſt them as ſoon as they begin to run up, if any happen to be left, leſt, by intermixing with the good ones, the Seeds may degenerate.

It may be ſome Perſons may object, that ſuppoſe ſome bad ones ſhould happen to be left among them (for Seeds to ſow for ſmall Sallads), yet the good ones being mark'd, the Seeds need not be mixed, and ſo no Danger can enſue from thence: but notwithſtanding ever ſo much Care being taken to keep the Seeds ſeparate, yet, whether from the intermixing of the *Farina* during the time of their being in Flower, or what other Cauſe, I can't ſay; but it hath been obſerved, that where good and bad Plants have ſeeded upon the ſame Spot, the Seeds of the good Plants, which were carefully ſaved ſeparately, have very much degenerated, and proved worſe than ſuch as have ſeeded by themſelves. The Seeds ſhould always be ſaved either from thoſe which ſtood thro' the Winter, or thoſe which were ſown early in the Spring; for the late ones very ſeldom perfect their Seeds.

The *Cilicia*, Imperial, Royal, Black, White, and Upright *Cos* Lettuces may be ſown at the following times: the firſt Seaſon for ſowing theſe Seeds is at the latter End of *February*, or the Beginning of *March*, upon a warm light Soil, and an open Situation; *i. e.* not overſhadow'd with Trees; and when the Plants are come up, they ſhould be either hoed out, or tranſplanted into another Spot of Ground (as was directed for the Cabbage-lettuce), obſerving to leave theſe Sorts fifteen or ſixteen Inches apart each Way; which will be full near enough for theſe Plants, eſpecially if the Soil be good; and you muſt carefully keep them clear from Weeds, which is the only Culture they will require, except the Black *Cos* Lettuce, which ſhould be tied up when they are full-grown (in the manner as was directed for blanching of Endive), to whiten their inner Leaves, and render them criſp; otherwiſe they are ſeldom good for much, rarely cabbaging without this Aſſiſtance.

When your Lettuces are in Perfection, you ſhould look over them, and mark as many of the beſt of them as you intend for Seed (in the ſame manner as was before directed for the common Cabbage-lettuce); being very careful not to ſuffer any ordinary ones to ſeed amongſt them, as was before obſerved; which would prove more injurious to theſe Sorts than to the common, as being more inclinable to degenerate with us, if they are not carefully preſerved.

You may alſo continue theſe Sorts through the Seaſon, by ſowing them in *April*, *May*, and *June*; obſerving (as was before directed) to ſow the late Crops in a moiſt ſhady Situation, otherwiſe they will run up to Seed before they grow to any Size; but in *Auguſt*, toward the latter End, you may ſow of theſe Sorts, to abide the Winter; which Plants ſhould be tranſplanted either under Glaſſes, or into a Bed, which ſhould be arch'd over with Hoops, in order to be cover'd in the Winter, otherwiſe in hard Winters they are often deſtroy'd; but you muſt conſtantly let theſe Plants have as much open free Air as poſſible, when the Weather is mild; only covering them in hard Rains, or froſty Weather; for if they are kept too cloſely cover'd in Winter, they will be ſubject to a Mouldineſs, which ſoon rots them.

In the Spring theſe Plants ſhould be planted out into a rich light Soil, allowing them at leaſt eighteen Inches Diſtance each Way; for if they are planted too cloſe, they are very ſubject to grow tall, but ſeldom cabbage well; and from this Crop, if they ſucceed well, it will be proper to ſave your Seeds: tho' you ſhould alſo ſave from that Crop ſown in the Spring; becauſe ſometimes it happens, that the firſt may fail by a wet Seaſon, when the Plants are full in Flower, and the ſecond Crop may ſucceed, by having a more favourable Seaſon; and if they ſhould both ſucceed, there will be no Harm in that, ſince the Seeds will grow very well when two Years old; and if well ſaved, at three; but this will not always happen.

The moſt valuable of all the Sorts of Lettuce in *England* are the *Egyptian* Green *Cos*, and the *Verſailles*, or White *Cos*, the *Cilicia*, and Black *Cos*; tho' ſome People are very fond of the Royal and Imperial Lettuces; but they ſeldom ſell ſo well in the *London* Markets as the other, nor are ſo generally eſteem'd. Indeed of late Years, ſince the White *Cos* has been commonly cultivated, it has obtain'd the Preference of all the other Sorts, until the *Egyptian* Green *Cos* was introduced; which is ſo much ſweeter and tenderer than the White *Cos*, that it is by all good Judges eſteemed the beſt Sort of Lettuce known. This Sort will endure the Cold of our ordinary Winters full as well as the White *Cos*; but at the Seaſon of its Cabbaging, if there happens to be much wet, this Sort, being very tender, is very ſubject to rot.

The Brown *Dutch* and Green Capuchin Lettuces are very hardy, and may be ſown at the ſame Seaſons as was directed for the common Cabbage-lettuce; and are very proper to plant under a Wall or Hedge to ſtand the Winter; where many times theſe will abide. when moſt of the other Sorts are deſtroy'd; and therefore they will prove very acceptable, at a time when few other Sorts are to be had; they will alſo endure more Heat and Drought than moſt other Sorts of Lettuce, which renders them very proper for late ſowing; for it often happens, in very hot Weather, that the other Sorts of Lettuce will run up to Seed in a few Days after they are cabbaged; whereas theſe will abide near three Weeks in good Order, eſpecially if Care be taken to cut the forwardeſt firſt, leaving thoſe that are not ſo hard cabbaged to be laſt. In ſaving of theſe Seeds, the ſame Care ſhould be taken to preſerve only ſuch as are very large, and well-cabbaged, otherwiſe the Seeds will degenerate, and be good for little.

The Red Capuchin, *Roman*, and Prince-lettuces are pretty Varieties, and Cabbage very early; for which Reaſon a few of them may be preſerved; as may alſo ſome of the *Aleppo*, for the Beauty of its ſpotted Leaves; tho' very few People care for either of theſe Sorts at Table, when the other more valuable ones are to be obtain'd; but in a Scarcity, theſe may ſupply the Place pretty well; and theſe Sorts are very proper for Soups. The Seeds of theſe muſt alſo be ſaved from ſuch as cabbage beſt, otherwiſe they will degenerate, and be good for little.

In ſaving Seeds of all theſe Sorts of Lettuce, you ſhould obſerve, when the Plants have run up, to fix a Stake down by the Sides of each, to which the Stem ſhould be faſten'd, to prevent their being broken, or blown out of the Ground by Wind; to which the *Cilicia*, and the other large-growing Lettuces, are very ſubject when they are in Flower. You muſt alſo obſerve to cut ſuch Branches of the large-growing Lettuces as ripen firſt, and not wait to have the Seed of the whole Plant ripe together, which never happens; but, on the contrary, ſome Branches will be ripe a Fortnight or three Weeks before others: and when you cut them, they muſt be ſpread upon a coarſe Cloth in a dry Place, that the Seeds may dry; after which you ſhould beat them out, and dry them again, and then preſerve them for Uſe, being careful to hang them up where Mice and other Vermin can't come at them; for if they do, they will ſoon eat them up.

LACTUCA AGNINI. *Vide* Valerianella.

LADY's SLIPPER. *Vide* Helleborine.

LADY's SMOCK. *Vide* Cardamine.

LAGOECIA, Baſtard Cumin.

The *Characters* are;

It hath many Flowers collected into an Head, which have one common Empalement compoſed of eight indented Leaves; but the ſimple Empalement to each Flower hath four Leaves, which are very narrow and pennated: the Flower conſiſts of five horned Petals, which are ſhorter than the Empalement: at the Bottom of each Flower is ſituated the Pointal, attended by five Stamina, *which are* *long and narrow: the Pointal afterward changes to an oval Seed crowned with the Empalement.*

There is but one *Species* of this Plant; which is,

Lagoecia. *Lin. Hort. Cliff.* Baſtard, or Wild Cumin.

We have no other *Engliſh* Name for this Plant, nor is this a very proper one; but as it has been titled by ſome of the antient Botaniſts *Cuminum ſylveſtre*, i. e. Wild Cumin; and by Dr. *Tournefort* it is made a diſtinct Genus, by the Title of *Cuminoides*; it may be ſtiled Wild Cumin.

This is an annual Plant, which grows about a Foot high; the Leaves reſemble thoſe of the Honewort: the Flowers, which are of a greeniſh-yellow Colour, are collected in ſpherical Heads at the Extremity of the Shoots: but there being little Beauty in the Plant, it is rarely cultivated but in Botanic Gardens. It grows plentifully about *Aix* in *Provence*, as alſo in moſt of the Iſlands of the *Archipelago*. The Seeds of this Plant ſhould be ſown in the Autumn, ſoon after they are ripe; or if they are permitted to ſcatter, the Plants will come up, and require no other Care but to clear them from Weeds. When the Seeds are ſown in the Spring, they commonly remain in the Ground a Year before they grow, and ſometimes I have known them lie two or three Years in the Ground; ſo that if the Plants do not come up the firſt Year, the Ground ſhould not be diſturbed.

LAGOPUS. *Vide* Trifolium.

LAMIUM, Archangel or Dead-nettle.

The *Characters* are;

It hath a labiated Flower conſiſting of one Leaf, whoſe upper Lip is hollow like a Spoon; but the under one is divided into two Segments, in the form of an Heart, and both end in Chaps, which are brimmed and edged: out of the Flower-cup, which is fiſtulous, and cut into five Segments, riſes the Pointal, fixed like a Nail in the hinder Part of the Flower; and attended, as it were, by four Embryoes, which afterward become ſo many triangular Seeds, ſhut up in an Huſk, which was before the Flower-cup.

The *Species* are;

1. Lamium *purpureum fœtidum, folio ſubrotundo, ſive Galeopſis Dioſcoridis. C. B. P.* Purple ſtinking Archangel or Dead-nettle.
2. Lamium *purpureum fœtidum, folio ſubrotundo, minus. H. L.* Leſſer purple ſtinking Dead-nettle.
3. Lamium *folio oblongo, flore rubro. Park. Theat.* Archangel with an oblong Leaf, and a red Flower.
4. Lamium *album, non fœtens, folio oblongo. C. B. P.* White Archangel or Dead-nettle.
5. Lamium *parietariæ facie Moriſ. H. R. Bleſ.* Dead-nettle with the Face of Pellitory.
6. Lamium *folio caulem ambiente, minus. C. B. P.* Leſſer Dead-nettle, with the Leaves encompaſſing the Stalk.
7. Lamium *rubrum minus, foliis profunde inciſis. Raii Syn.* Leſſer red Dead-nettle, whoſe Leaves are deeply cut.
8. Lamium *album fœtidum, folio ſubrotundo, minus. C. B. P.* Leſſer ſtinking Dead-nettle, with white Flowers, and a roundiſh Leaf.
9. Lamium *foliis caulem ambientibus, majus. C. B. P.* Greater Dead-nettle, with the Leaves encompaſſing the Stalk.
10. Lamium *Orientale, nunc moſchatum, nunc fœtidum, magno flore. Tourn. Cor.* Eaſtern Dead-

nettle, ſometimes ſweet-ſcented, and ſometimes ſtinking, with a large Flower.

11. LAMIUM *Orientale, foliis eleganter laciniatis. Tourn. Cor.* Eaſtern Dead-nettle, with elegantly jagged Leaves.

12. LAMIUM *Orientale incanum, flore albo, cum labio ſuperiori crenato. Tourn. Cor.* Hoary Eaſtern Dead-nettle, with a white Flower, whoſe Upper-lip is notched.

13. LAMIUM *Orientale incanum, flore purpuraſcente, cum labio ſuperiori crenato. Tourn. Cor.* Hoary Eaſtern Dead-nettle, with a purpliſh Flower, whoſe Upper-lip is notched.

14. LAMIUM *Orientale album latifolium altiſſimum. Tourn. Cor.* Talleſt Eaſtern Dead-nettle, with a broad Leaf, and a white Flower.

The firſt, ſecond, ſixth, ſeventh, eighth, and ninth Sorts are annual Plants, which grow wild on dry Banks in ſeveral Parts of *England*; ſo are ſeldom preſerved but in Botanic Gardens, for the ſake of Variety. All theſe Sorts flower in *March* and *April*, and their Seeds are ripe ſoon after; which if permitted to ſcatter, the Plants will come up in great Plenty, and become troubleſome Weeds. The firſt Sort is uſed in Medicine; but the Markets are ſupplied with it from the Fields.

The fourth Sort is alſo very common under Hedges, in divers Parts of *England*: this is alſo uſed in Medicine. The Roots of this Sort ſpread very far under-ground; and where it once fixes, it is very difficult to eradicate, eſpecially under Hedges or Trees, where the Roots of this Plant will intermix with thoſe of the Plants, ſo that they cannot be eaſily taken out, without diſturbing the Roots of the Plants. The third Sort is a Variety of the fourth, from which it differs in the Colour of the Flowers, which in this are of a bright red Colour. Theſe two are abiding Plants, which propagate themſelves very faſt by their creeping Roots.

The fifth, tenth, and eleventh Sorts are annual Plants, which do not grow wild in *England*, but are equally hardy with thoſe beforementioned. Theſe flower early in the Spring, and if their Seeds are permitted to ſcatter, the Plants will come up in the Autumn in great Plenty. The fifth Sort has no great Beauty, ſo is only preſerved for Variety; being very like our common Dead-nettle, except in the Difference of the Leaf. But the tenth Sort deſerves a Place in ſome abject Part of the Garden, for the Beauty of its Leaves in Winter; which are variegated ſomewhat like the common Cyclamen, and make an Appearance very like that Plant in Winter. Theſe Leaves, in dry Weather, have a muſky Scent on their being gently rubbed; but if they are bruiſed, they become ſtinking and diſagreeable.

The twelfth, thirteenth, and fourteenth Sorts are abiding Plants, which will trail on the Ground, and ſend forth Roots from the Joints of their Stalks, whereby they propagate themſelves very faſt: ſo where-ever they are permitted to have room in a Garden, they ſhould be kept within Compaſs; otherwiſe they will ſpread, and become troubleſome.

LAMPSANA, Nipplewort.

The *Characters* are;

It hath a ſemifloſculous Flower, conſiſting of many Half-florets, upon which the Embryoes ſit, and are included with them in a multifid Cup, conſiſting of one Leaf, which afterward becomes a ſtreaked Veſſel including many narrow-pointed Seeds.

The *Species* are;

1. LAMPSANA. *Dod. Pempt.* Common Nipplewort.

2. LAMPSANA *folio ampliſſimo criſpo. Petiver.* Nipplewort with a large curled Leaf.

3. LAMPSANA *Orientalis elatior, foliis nigris maculis aſperſis. D. Sherard.* Taller Eaſtern Nipplewort, with Leaves ſpotted with black Marks.

The firſt Sort is a very common Weed on dry Banks, and on the Way-ſides, in moſt Parts of *England:* the other two Sorts were brought from abroad into Botanic Gardens, where they are preſerved for Variety; but they are not allowed a Place in any other Gardens.

Theſe are all annual Plants, which flower in *April*, and their Seeds ripen in *June*; which, if permitted to ſcatter, will ſtock the Ground with Plants: ſo that where they are admitted, there ſhould be but few of the Plants ſuffered to ſeed, and thoſe ſhould be in ſome rude abject Part of the Garden; leſt, by their ſcattering Seeds, they ſhould fill the Garden, and overbear ſuch Plants as better deſerve a Place.

But where the common Sort hath been ſuffered to ſhed its Seeds, and thereby become a troubleſome Weed, it may be deſtroyed by keeping it hoed down before it comes to flower, ſo that no Plants be permitted to ſcatter Seeds; for as it is an annual Plant, ſo where-ever Care is taken to prevent its ſeeding, it will in two or three Years be abſolutely deſtroyed.

The firſt Sort was formerly uſed in Medicine in *England*, and is ſtill continued in Uſe in other Countries; but it is not mentioned by the College of Phyſicians in their Diſpenſatory.

LANTANA, *American* Viburnum, or Camara.

The *Characters* are;

The Empalement of the Flower is cut into four Segments: the Flower is monopetalous, of an irregular Shape, having a cylindrical Tube, which extends beyond the Empalement, and is ſpread open at the Brim, where it is divided into five Parts: in the Centre of the Flower is ſituated the Pointal, ſupporting a crooked Stigma, *attended by four* Stamina, *two being longer than the other: the Pointal afterward changes to a roundiſh Fruit opening into two Cells, and incloſing a roundiſh Seed.*

This Genus of Plants was titled by Father *Plumier*, Camara, which is the *American* Name of the Plant; therefore Dr. *Linnæus* has altered it to this of *Lantana*, which is an old Name applied to the *Viburnum*, or common Wayfaring-tree.

The *Species* are;

1. LANTANA *foliis oppoſitis petiolatis, floribus capitatis. Lin. Hort. Cliff. American* Viburnum, with Leaves growing oppoſite, and the Flowers collected in an Head.

2. LANTANA *foliis oppoſitis petiolatis, caule aculeato. Lin. Hort. Cliff. American* Viburnum, with oppoſite Leaves, and a prickly Stalk.

3. LANTANA *foliis oppoſitis cordatis petiolatis hirſutis, floribus capitatis. American* Viburnum, with rough heart-ſhaped Leaves growing by Pairs, and the Flowers collected in an Head.

4. LANTANA *foliis lanceolatis ſeſſilibus, caule glabro. American* Viburnum, with ſpear-ſhaped Leaves growing cloſe to the Stalks, and a ſmooth Stalk.

5. LANTANA *foliis oppoſitis petiolatis, caule hirſuto, floribus ſpicatis.*

American Viburnum, with Leaves growing oppoſite, an hairy Stalk, and Flowers growing in Spikes.

6. LANTANA *foliis alternis ſeſſilibus, floribus ſolitariis. Lin. Hort. Cliff.* Viburnum with Leaves growing alternately without Footſtalks, and Flowers growing ſingly, commonly called Ilex-leav'd Jaſmine.

The five Sorts firſt-mentioned are Natives of the warmeſt Parts of *America*, where there are ſeveral other Species, which differ in their Growth, Shape of their Leaves and Flowers; and there are ſeveral Varieties of theſe differing in the Colour of their Flowers. We have two Varieties of the firſt and ſecond Sorts here enumerated, one with an orange-coloured Flower, and the other a yellow Flower, which varies to a Purple as it decays. The third Sort produces white Flowers, which are but ſmall; ſo they make no great Appearance.

The fourth Sort is of humble Growth, ſeldom riſing more than three Feet high: the Stalks of this Sort are ſmooth, and the Leaves grow very cloſe to the Branches; the Flowers are of a bright purple Colour.

The fifth Sort is alſo of low Growth: the Branches are not ſo woody, as are thoſe of the other Kinds: the Leaves are broad, and pointed; and the whole Plant is very hairy. The Flowers grow on long Footſtalks, being of a purple Colour, ſet cloſe together in a Spike: theſe are ſucceeded by large purple Berries, which are eaten in the *Weſt-Indies*.

All theſe Sorts grow wild in the Iſland of *Jamaica*, from whence I have received their Seeds ſeveral times. The laſt Sort was ſent me from the North Side of that Iſland. All theſe Sorts require a moderate Stove to preſerve them thro' the Winter, in *England*; but in Summer they may be expoſed abroad in a ſheltered Situation, where they will continue a long time in Flower, and make a very fine Appearance. The two firſt Sorts will often continue their flowering for four or five Months, provided they are not too much drawn in the Stove; for as theſe produce their Flowers from the Wings of the Leaves, ſo as the Shoots advance, there are new Flowers produced till very late in the Autumn; and if the Plants are preſerved in a moderate Degree of Warmth in Winter, they will begin to flower in *May*; but as the Spring advances, they ſhould have a large Share of Air; otherwiſe the Shoots will be very weak, and the Plants will be infeſted with Inſects, which will deface the Plants, and prevent their Growth: therefore when the Weather is warm, the Glaſſes of the Stove ſhould be opened every Day, to admit as much Air as poſſible; and about the Middle of *June*, the Plants may be removed into the open Air; but they ſhould have a warm-ſheltered Situation, and in dry warm Weather they will require plenty of Water.

Theſe Sorts may be propagated either from Seeds, or by Cuttings. The firſt, ſecond, and fifth Sorts frequently perfect their Seeds in *England*: but the other have not as yet produced any here. Theſe Seeds muſt be ſown on a good Hot-bed early in the Spring; and when the Plants come up, they muſt be each tranſplanted into a ſeparate ſmall Pot, and plunged again into the Hot-bed to bring them forward: but as the Plants advance in Strength, ſo they ſhould, by degrees, be hardened to bear the open

Air; and may afterward be removed into it, and treated in the ſame manner as the old Plants.

If they are propagated by Cuttings, the beſt time for planting them is in *July*, after the Plants have been expoſed to the open Air for about a Month; by which time the Shoots will be hardened ſo as to be out of Danger of rotting with a little Moiſture. Theſe Cuttings ſhould be planted in ſmall Pots filled with light Earth, and plunged into a moderate Hot-bed: and if they are ſcreened from the Violence of the Sun in the Middle of the Day, they will be rooted in about ſix Weeks time; when they muſt be hardened gradually to bear the open Air, and afterward treated as the old Plants.

The laſt Sort has been long in the *Engliſh* Gardens, and is commonly called the Ilex-leav'd Jaſmine. This Plant was brought from the *Cape of Good Hope*; ſo is not very tender; therefore may be preſerved in a good Green-houſe in Winter: but during that Seaſon it muſt have a large Share of Air in mild Weather, otherwiſe it is apt to grow mouldy; and this will cauſe the tender Branches to decay. In the Summer-ſeaſon it may be expoſed in the open Air, with other Green-houſe Plants, in a ſheltered Situation, where it will add to the Variety: and altho' the Flowers are ſmall, and are produced ſingly from between the Leaves, ſo do not make any great Appearance; yet as there is a Succeſſion of theſe Flowers moſt Part of the Year, and the Leaves continuing green throughout the Year, it is worthy of a Place in every Collection of Plants.

LAPATHUM, The Dock.

The *Characters* are;

The Empalement of the Flower is compoſed of three ſmall Leaves, which are reflexed: the Flower hath three Leaves, which are larger than thoſe of the Empalement, and are coloured: in the Centre of the Flower is ſituated the three-cornered Pointal, ſupporting three ſmall Styles, and is attended by ſix Stamina: *the Pointal afterward becomes a triangular Seed, incloſed by the Petals of the Flower.*

The *Species* are;

1. LAPATHUM *præſtantiſſimum, Rhabarbarum officinarum dictum. Mor. Hiſt.* The *Pontic* Rhubarb.
2. LAPATHUM *Alpinum, folio ſubrotundo. Mor. Hiſt.* Round-leav'd *Alpine* Dock, by ſome called Monks Rhubarb.
3. LAPATHUM *hortenſe, folio oblongo, ſive ſecundum Dioſcoridis. C. B. P.* Long-leav'd Garden-dock, or Patience.
4. LAPATHUM *folio acuto plano. C. B. P.* Sharp-pointed Dock.
5. LAPATHUM *folio acuto criſpo. C. B. P.* Curled ſharp-pointed Dock.
6. LAPATHUM *folio acuto rubente. C. B. P.* Bloodwort or ſharp-pointed Dock, with red Veins, and Footſtalks to the Leaves.
7. LAPATHUM *folio acuto, flore aureo. C B. P.* Sharp-pointed Dock, with golden Flowers.
8. LAPATHUM *acutum minimum. J. B.* The leaſt ſharp-pointed Dock.
9. LAPATHUM *vulgare, folio obtuſo. J. B.* Common broad-leav'd Dock, vulgarly call'd the Butter-dock.
10. LAPATHUM *ſylveſtre, folio ſubrotundo, ſeminis involucris dentatis nobis. Mor. Hiſt.* Common broad-leav'd Dock, with indented Covers to the Seeds.
11. LAPATHUM *aquaticum, folio cubitali. C. B. P.* Great Water-dock.
12. LAPATHUM *aquaticum minus. C. B. P.* Leſſer Water-dock.
13. LAPATHUM *pulchrum Bono-*

nienſe ſinuatum. J. B. The Fiddle Dock.

14. Lapathum *hortenſe latifolium. C. B. P.* The true Monks Rhubarb.

15. Lapathum *Chalepenſe, folio acuto, ſeminum involucris profunde dentatis. Mor. Hiſt.* Sharp-pointed *Aleppo* Dock, with the Seed-covers deeply indented.

16. Lapathum *Ægyptiacum annuum, parietariæ folio, capſula ſeminis longius barbata. Hort. Piſ.* Annual *Egyptian* Dock, with a Pellitory-leaf, and long Beards to the Seed-veſſels.

17. Lapathum *Orientale, folio latiſſimo undulato & mucronato, ſive Rhabarbarum verum.* The true Rhubarb.

The firſt Sort here mentioned was brought to *England* many Years ſince, for the true Rhubarb; but ſince it hath been commonly uſed in the Shops for the *Rhaponticum*, being greatly inferior to the *Rhabarbarum*. This Sort is frequently cultivated in the Gardens, and is call'd *Engliſh* Rhubarb. The Roots of this enter as an Ingredient into ſeveral compound Medicines: and of late Years, the Footſtalks of the Leaves have been uſed for making of Tarts in the Spring of the Year, as theſe may be had before Gooſberries are large enough for that Purpoſe. Theſe Footſtalks muſt have their outer Skin peel'd off, otherwiſe they will be very ſtringy: when this is done, the pulpy Part will bake very tender, and almoſt as clear as the Apricot; and having an agreeable acid Flavour, is by many Perſons eſteemed for this Purpoſe.

Where theſe Plants are propagated for this Uſe, they ſhould be planted at leaſt three Feet aſunder, and in rich Ground, which will encourage them to put out large Leaves; ſo that the Footſtalks will be very large, in which is the chief Excellence of them: for in thoſe which are ſmall, there will be very little Pulp; and that will not be near ſo good for Uſe as that of the large.

The ſecond Sort is ſometimes cultivated in Gardens, for medicinal Uſe; tho' there is a Diſpute, whether this be the true Monks Rhubarb, or not: but there is no great Difference between the Roots of this Plant, and the other diſputed Sort: but Dr. *Boerhaave*, and ſome other Botaniſts, have mentioned the fourteenth Sort, as the true Monks Rhubarb; but I ſuſpect this to be only an accidental Variety of the ninth Sort, and not a diſtinct Species: however, I believe that the Roots of this, and the third Sort, are indifferently uſed in *London*, for the Monks Rhubarb.

The third Sort was formerly cultivated in Gardens as a Pot-herb; but of late Years it has been wholly diſuſed for that Purpoſe, and now only preſerved in Gardens for medicinal Uſe.

The ten next-mentioned Sorts grow wild in many Parts of *England*, and are ſeldom admitted into Gardens; but as ſeveral of theſe are uſed in Medicine, I have put down the Names by which they are diſtinguiſhed amongſt the Botaniſts. The firſt and third Sorts are directed by the College of Phyſicians to be uſed in Medicine; but the People who ſupply the Markets, take the Roots of all the Sorts promiſcuouſly, as they find them. Theſe two Sorts grow near Hedges, and in ſhady Lanes, which are not much frequented, in moſt Parts of *England*; but the third Sort is leſs common than the firſt, from which it differs in nothing but the Stalks and Veins of the Leaves being red. This is frequently called Bloodwort.

The Roots of the eighth Sort are alſo uſed in Medicine: this is the Plant which *Muntingius*, a curious Botaniſt of *Groningen* in *Holland*, ſuppoſes to be the *Herba Britannica* of the Antients, which was found to be a ſovereign Remedy for the Scurvy. This Sort grows frequently in ſtanding Waters, where it produces Leaves two and an half or three Feet in Length. When this Sort is planted on dry Land, or the Water drained off the Ground, where it naturally grows, it will not riſe to near the Size of thoſe Plants which grow in deep Waters.

The eleventh Sort, whoſe Roots are uſed in Medicine, and is by ſome thought to be the true Monks Rhubarb, is not common in *England*, if it is really different from our broad-leav'd Dock; ſo that thoſe who uſe Roots of *Engliſh* Growth, are ſupplied with the Patience Dock, or the round-leav'd *Alpine* Dock; both which Sorts are cultivated in the *Engliſh* Gardens.

The twelfth and thirteenth Sorts are Foreigners, which have been introduced by the Curious in Botany, for the ſake of Variety; but they are not uſed in Medicine: and as they are Plants of no great Beauty, they do not merit a Place, unleſs in Botanic Gardens, for Variety-ſake. The twelfth Sort will continue two or three Years; but the thirteenth Sort is an annual Plant.

The Seeds of the fourteenth Sort I received for the true Rhubarb: theſe were gathered by a Gentleman who was on the Spot, where the Roots are taken up, and ſent to *Petersburgh* in *Muſcovy*, for the Supply of *Europe*; ſo that we may ſuppoſe there is no great Reaſon to doubt of its being the true Kind.

But, however it happens, the Roots which have grown in *England*, are not comparable to the foreign Rhubarb: whether this may be occaſion'd by the not taking up of the Roots at a proper Seaſon, or from what other Cauſe, we cannot as yet determine; but we may hope ſome future Trial may inform us better. Indeed there are ſome Perſons who imagine, that there are ſeveral Species of Rhubarb, which grow in different Countries; and that the Sort here mentioned is not the beſt: whether this is ſo or not, I cannot determine: but I have great Reaſon to ſuſpect theſe Plants are not ſpecifically different, but vary from Seeds: for from the Seeds of one Plant of the firſt Sort, which grew by a Plant of this laſt, I had almoſt an equal Number of Plants produced intermixed, tho' none of the Seeds of the laſt came to Maturity: therefore it could not happen from any Mixture of the Seeds, nor could it ſcarce ariſe from any Impregnation of the Male Duſt, becauſe the Flowers of the laſt were decayed before thoſe of the firſt were open.

All the Sorts of Dock are propagated by Seeds, which ſhould be ſown in Autumn, ſoon after they are ripe; for when the Seeds are kept out of the Ground until Spring, they will remain a whole Year in the Ground before the Plants appear; whereas thoſe ſown in Autumn will come up the following Spring. Where the Seeds of the true Rhubarb (or any of the other Sorts, whoſe Roots are uſed in Medicine) are ſown to propagate the Plants, they ſhould have a Soil rather moiſt than dry, and of a pretty good Depth, that the Roots may have room

room to run down. The Seeds ſhould be ſown thin; and in the Spring, when the Plants come up, they ſhould be hoed out after the manner directed for Parſneps and Carrots, leaving the large-growing Kinds (as the true Rhubarb, Rhapontic, and *Alpine* round-leav'd Dock) two Feet and an half aſunder at leaſt, becauſe theſe produce very large-ſpreading Leaves; and if they have not ſufficient room to grow, the Roots will be ſmall. When this is done, the Plants will require no other Management, but to keep them clear from Weeds; and in two or three Years time the Roots will be fit for Uſe, when they ſhould be taken up ſoon after their Leaves decay in Autumn. But it will be well worth trying, whether thoſe Plants, whoſe Flower-ſtems are pinched off, ſoon after they appear in Spring (and are never ſuffered to flower or ſeed), do not produce better Roots, than thoſe which are permitted to ſeed, becauſe we find moſt other Roots grow ſticky and tough, after they have ſeeded, and not near ſo good for Uſe as before; and as theſe Plants frequently ſend out Flower-ſtems the ſecond Year, it may be neceſſary to prevent their Growth, in order to encourage their Roots.

LARIX, The Larch-tree.

The *Characters* are;

The Leaves (which are long and narrow) are produced out of little Tubercles, in form of a Painter's Pencil: the Cones are produced at remote Diſtances from the Male Flowers on the ſame Tree: the Male Flowers are very like ſmall Cones at their firſt Appearance, but afterward ſtretch out in Length.

The *Species* are;

1. LARIX *folio deciduo, conifera. J. B.* The Larch-tree.

2. LARIX *folio deciduo, rudimentis conorum candidiſſimis. Pluk. Alm.* Larch-tree with white Rudiments, or rather, with white Male Flowers.

3. LARIX *Orientalis, fructu rotundiori obtuſo. Inſt. R. Herb.* The Cedar of *Libanus*.

There are two other Varieties of the Larch-tree: one of them is brought from *North America*, and is called the Black Larch; the other came from *Archangel*. This laſt Sort uſually puts out its Leaves three Weeks before the common Sort: both theſe grow different from the common Sort, having ſlender hanging Branches: but I believe they can hardly be deemed diſtinct Species.

The firſt of theſe Trees is pretty common in the *Engliſh* Gardens: this is a Native of the *Alps*, and *Pyrenean* Mountains; but thrives exceeding well here, eſpecially if it be planted upon an elevated Situation; as may be obſerved by thoſe which were planted a few Years ſince at *Wimbleton* in *Surry*, which are now grown to be large Trees, and produce annually a large Quantity of Cones.

The ſecond Sort ſeems to be only a ſeminal Variety from the firſt, from which it differs in the Colour of the Male Flowers, which in this is white, but in the other of a bright-red Colour; as alſo in the Colour of the Leaves, which in this Sort are a ſomewhat lighter Green than thoſe of the other; nor do the Trees of this Kind ſeem to be ſo vigorous: but whether the Seeds of this Kind will produce the ſame, I can't as yet ſay, having never ſeen any of the Plants which were raiſed from theſe Seeds produce any Flowers; but however, it may be obtain'd by inarching it into the common Sort.

Theſe Trees are propagated by Seeds, which ſhould be ſown in the Beginning of *March*, upon a Bed of light Soil, expoſed only to the morning Sun: or otherwiſe it may be ſown in Pots or Boxes of light Earth, and placed near an Hedge, where they may have the morning Sun only. The Seed ſhould be cover'd about half an Inch thick with fine light Earth, and in very dry Weather ſhould be gently refreſh'd with Water. In about ſix Weeks, if your Seeds were good, the Plants will come up, at which time you ſhould carefully guard them againſt the rapacious Birds, which would otherwiſe pull off the Heads of the Plants, as they thruſt themſelves out of the Ground with their Covers on them; and obſerve to refreſh them with Water in dry Weather, eſpecially if they are ſown in Pots or Boxes, as alſo to keep them conſtantly clear from Weeds, which, if ſuffer'd to grow among the young Plants, will ſoon deſtroy them: nor ſhould they be too much expos'd to the Sun, or ſtrong Winds; both which are very injurious to theſe Plants while they are young: but in *October* you ſhould (if they are in Boxes or Pots) remove them into a Situation where they may be defended from ſharp Winds, which are ſometimes hurtful to them while young; but afterwards they will endure the ſevereſt Weather of our Climate.

The Latter-end of *October*, or the Beginning of *November* following, you ſhould remove theſe Plants into Beds of freſh light Earth, at about ten Inches Diſtance each Way; obſerving to water them, if the Seaſon ſhould prove dry, as alſo to lay a little Mulch upon the Surface of the Ground, to prevent the Sun and Winds from drying their Roots: in theſe Beds they may remain two Years, during which time you ſhould carefully keep them clear from Weeds; as alſo obſerve, if any of them incline their Heads downward, to thruſt a ſmall Stake into the Ground by ſuch of them, and faſten their Heads upright thereto; for if they are ſuffer'd to grow on one ſide while young, they are rarely to be reduced to an upright Figure again.

When the Plants have remain'd in theſe Beds two Years, they will be fit to tranſplant into the Nurſery; in order to which, you ſhould make choice of a Piece of freſh light Earth, not over-dry, nor too wet: this Ground ſhould be well dug, and cleans'd from Weeds, and Roots of Plants or Trees; and after having laid it level, you ſhould mark out the Rows at three Feet Diſtance; then you ſhould take up the Plants carefully, preſerving a good Ball of Earth to their Roots, and plant them in the Lines at eighteen Inches aſunder, obſerving to mulch their Roots, and alſo to water them, to preſerve their Roots from drying. The beſt Seaſon for this Work is toward the Middle or Latter-end of *October*, according as the Seaſon proves; for as ſoon as they begin to caſt their Leaves, they may be removed with great Safety. During the time they remain in this Nurſery, they muſt conſtantly be kept clean from Weeds; and the Ground between them ſhould be dug every Spring, that it may be looſe for the Fibres of their Roots to ſtrike into; and the Weeds will be hereby more effectually deſtroy'd than by any other Method: and the Roots of the Plants, being annually cut round, will cauſe them to puſh out a greater Number of Fibres, whereby they will be much ſafer to remove, than they would be, if permitted to grow undiſturb'd for ſeveral Years.

You muſt alſo obſerve to train their Heads upright, and not ſuffer them to grow awry, which they are naturally too much inclin'd to: but I would by no means adviſe the ſhearing them in Pyramids (as is too often practiſed), but rather lead them up for Timber-trees; for they will grow to a conſiderable Size, provided they like the Soil they are planted in.

In removing theſe Trees from the Nurſery to the Places where they are deſign'd to be continued, you ſhould always obſerve to do it juſt as they caſt their Leaves; as alſo to take them up with a large Ball of Earth to their Roots; and, when planted, the Ground ſhould be mulch'd, and the Plants ſtak'd, to prevent the Wind from looſening them, or blowing them out of the Ground. Theſe Directions, if duly executed, will be ſufficient, and there will be no Danger of their ſucceeding. But the chief Cauſe why many of theſe Trees have fail'd, upon their being remov'd, was the not doing it in a proper Seaſon, or elſe that they were not carefully taken up.

Theſe Trees ſhould not remain long in the Nurſery before they are tranſplanted where they are to ſtand for good; for when they are large, they do not bear removing well. The beſt Size for tranſplanting are thoſe of about two Feet, or two Feet and an half high. Theſe will ſoon outgrow ſuch as are much larger when tranſplanted.

As theſe Trees put out early in the Spring, ſo where they cannot be removed at *Michaelmas*, it ſhould not be deferred later than *February*; becauſe when they begin to ſhoot, it will be too late.

Theſe Trees are very proper for the Sides of barren Hills, where few other Sorts will thrive ſo well; nor is this Tree very delicate in its Soil; but will grow much better on poor ſtrong ſtony Land, than in rich Ground: and during the Summer they appear very beautiful; but in Autumn they caſt their Leaves, whereby ſome People have been deceiv'd, by ſuppoſing them dead, and have deſtroy'd them.

From the wounded Bark of this Tree exudes the pureſt *Venice* Turpentine; and on the Body and Branches of it grows the Agaric, which is a Drug uſed in Medicine: the Wood is very durable, and (by ſome) reported to be very difficult to burn. But I don't know how this ſhould be, to a Tree which abounds with Turpentine; tho' it is ſaid alſo to be ſo ponderous as to ſink in Water. It will poliſh exceeding well, and is by the Architects abroad much coveted, both for Houſes, and building of Ships.

Witſen, a *Dutch* Writer upon *Naval Architecture*, mentions a Ship to be long ſince found in the *Numidian Sea*, twelve Fathoms under Water, being chiefly built of this Timber and Cypreſs, both which Woods were reduced to that Hardneſs, as to reſiſt the ſharpeſt Tools; nor was any Part of it periſh'd, tho' it had lain above a thouſand Years ſubmerg'd. And it was upon Tables of this Wood that *Raphael*, and ſeveral of the greateſt Artiſts, eterniz'd their Skill, before the Uſe of Canvas was introduced.

The third Sort is the Cedar of *Libanus*, and is a Tree of great Antiquity; and, what is remarkable, this Tree is not found as a Native in any other Part of the World, ſo far as hath come to our Knowlege.

The Cones of this Tree are brought from the *Levant*, which, if kept intire, will preſerve their Seeds good for ſeveral Years: the time of their ripening is commonly in the Spring, and conſequently they are near one Year old before we receive them; for which they are not the worſe, but rather the better, the Cones having diſcharged a great Part of their Reſin by lying, and the Seeds are much eaſier to get out of them than ſuch as are freſh taken from the Tree.

The beſt way to get the Seeds out is, to ſplit the Cones, by driving a ſharp Piece of Iron thro' the Centre length-ways, and ſo pull the Seeds out with your Fingers, which you will find are faſtened to a thin leafy Subſtance, as are thoſe of the Fir-tree: but before the Seeds are taken out, it will be proper to put the Cones in Water for twenty-four Hours, which will render them eaſier to ſplit; ſo that the Seeds may be taken out with greater Safety; for there will require Care in the doing of it, otherwiſe many of the Seeds will be ſpoiled; for they are very tender, and will bruiſe where there is any Force employed to get them out.

Theſe Seeds ſhould be ſown in Boxes or Pots of light freſh Earth, and treated as was directed for the Firs (to which I refer the Reader); but only ſhall obſerve, that theſe require more Shade in Summer than the Firs; and the ſooner they are planted into the open Ground, the better.

When theſe Plants begin to ſhoot ſtrong, you will generally find the leading Shoot incline to one Side; therefore, if you intend to have them ſtrait, you muſt ſupport them with Stakes, obſerving to keep the Leader always cloſe tied up, until you have gotten them to the Height you deſign them; otherwiſe their Branches will extend on every Side, and prevent their growing tall.

Theſe Trees are by many People kept in Pyramids, and ſhear'd as Yews, *&c.* in which Form they loſe their greateſt Beauty; for the Extenſion of the Branches are very ſingular in this Tree, the Ends of their Shoots, for the moſt part, declining, and thereby ſhewing their upper Surface, which is conſtantly cloath'd with green Leaves in ſo regular a manner, as to appear, at ſome Diſtance, like a green Carpet; and theſe waving about with the Wind, make one of the moſt agreeable Proſpects that can be to terminate a *Viſta*, eſpecially if planted on a riſing Ground.

It is Matter of Surprize to me, that this Tree hath not been more cultivated in *England*, than at preſent we find it; ſince it would be a great Ornament to barren bleak Mountains, where few other Trees would grow; it being a Native of the coldeſt Parts of *Mount Libanus*, where the Snow continues moſt Part of the Year. And from the Obſervations I have made of theſe now growing in *England*, I find they thrive beſt on the pooreſt Soil: for ſuch of them as have been planted in a ſtrong rich loamy Earth, have made but a poor Progreſs, in compariſon to ſuch as have grown upon a ſtony meagre Soil. And that theſe Trees are of quick Growth, is evident from four of them now growing in the Phyſic-garden at *Chelſea*, which (as I have been credibly inform'd) were planted there in the Year 1683. and at that time were not above three Feet high; two of which Trees are at this time (*viz.* 1750.) upwards of eleven Feet in Girt, at two Feet above ground;

and their Branches extend more than twenty Feet on every Side their Trunks; which Branches (tho' produced twelve or fourteen Feet above the Surface) do at their Termination hang very near the Ground, and thereby afford a goodly Shade in the hotteſt Seaſon of the Year.

The Soil in which theſe Trees are planted, is a lean hungry Sand, mix'd with Gravel, the Surface of which is ſcarcely two Feet deep before an hard rocky Gravel appears. Theſe Trees ſtand at four Corners of a Pond, which is brick'd up within two Feet of their Trunks, ſo that their Roots have no room to ſpread on one Side, and conſequently are cramp'd in their Growth: but whether their ſtanding ſo near the Water may not have promoted their Growth, I can't ſay; but ſure I am, if their Roots had had full Scope in the Ground, they would have made a greater Progreſs. I have alſo obſerv'd, that lopping or cutting of theſe Trees is very injurious to them (more, perhaps, than to any other of the reſinous Trees) in retarding their Growth; for two of the four Trees above-mention'd, being unadviſedly planted near a Green-houſe, when they began to grow large, had their Branches lopp'd, to let the Rays of the Sun into the Houſe, whereby they have been ſo much check'd, that at preſent they are little more than half the Size of the other two.

Theſe Trees have all of them produc'd, for ſome Years, large Quantities of Katkins (or Male Flowers); tho' there are but two of them which have as yet produc'd Cones; nor is it above ſixteen or eighteen Years, that theſe have ripen'd their Cones, ſo as to perfect the Seed: but ſince we find, that they are ſo far naturaliz'd to our Country, as to produce ripe Seeds, we need not fear being ſoon ſupply'd with enough, without depending on thoſe Cones which are brought from the *Levant*; ſince there are many Trees of this Kind in *England*, which in a few Years muſt certainly bear: but I find they are more ſubject to produce and ripen their Cones in hard Winters, than in mild ones; which is a plain Indication, that they will ſucceed, even in the coldeſt Parts of *Scotland*, where, as well as in *England*, they might be propagated to great Advantage.

What we find mention'd in Scripture of the *lofty Cedars*, can be noways applicable to the Stature of this Tree; ſince, from the Experience we have of thoſe now growing in *England*, as alſo from the Teſtimony of ſeveral Travellers, who have viſited thoſe few remaining Trees on *Mount Libanus*, they are not inclin'd to grow very lofty; but, on the contrary, extend their Branches very far: to which the Alluſion made by the *Pſalmiſt* agrees very well, when he is deſcribing the flouriſhing State of a People, and ſays, *They ſhall ſpread their Branches like the Cedar-tree.*

Rauwolf, in his Travels, ſays, there were not at that time (*i. e. Anno* 1574.) upon *Mount Libanus* more than 26 Trees remaining, 24 of which ſtood in a Circle; and the other two, which ſtood at a ſmall Diſtance, had their Branches almoſt conſum'd with Age: nor could he find any younger Trees coming up to ſucceed them, tho' he look'd about diligently for ſome: theſe Trees (he ſays) were growing at the Foot of a ſmall Hill, on the Top of the Mountains, and amongſt the Snow. Theſe, having very large Branches, do commonly bend the Tree to one Side; but are extended to a great Length, and in ſo delicate and pleaſant Order, as if they were trimm'd, and made even, with great Diligence; by which they are eaſily diſtinguiſh'd at a great Diſtance from Fir-trees. The Leaves (continues he) are very like to thoſe of the Larch-tree, growing cloſe together in little Bunches, upon ſmall brown Shoots.

Maundrel, in his Travels, ſays, there were but 16 large Trees remaining, when he viſited the Mountains, ſome of which were of a prodigious Bulk; but that there were many more young Trees of a ſmaller Size: he meaſur'd one of the largeſt, and found it to be 12 Yards 6 Inches in Girt, and yet ſound, and 37 Yards in the Spread of its Boughs. At about five or ſix Yards from the Ground it was divided into five Limbs, each of which was equal to a great Tree. What *Maundrel* hath related, was confirmed to me by a worthy Gentleman of my Acquaintance, who was there in the Year 1720. with this Difference only, *viz.* in the Dimenſions of the Branches of the largeſt Tree, which he aſſured me he meaſur'd, and found to be twenty-two Yards Diameter. Now, whether Mr. *Maundrel* meant thirty-ſeven Yards in Circumference of the ſpreading Branches, or the Diameter of them, cannot be determined by his Expreſſions; yet neither of them well agrees with my Friend's Account.

Monſieur *le Brun* reckons about thirty-five or thirty-ſix Trees remaining upon *Mount Libanus*, when he was there; and would perſuade us it was not eaſy to reckon their Numbers (as is reported of our *Stonehenge* on *Saliſbury Plain*). He alſo ſays, their Cones do ſome of them grow dependent. Which is abundantly confuted by the above-mention'd Travellers, as alſo from our own Experience; for all the Cones grow upon the Upper-part of the Branches, and ſtand erect, having a ſtrong woody central Style, by which it is firmly annex'd to the Branch, ſo as with Difficulty to be taken off; which central Style remains upon the Branches after the Cone is fallen to Pieces; ſo that they never drop off whole, as the Pines do.

The Wood of this famous Tree is accounted proof againſt all Putrefaction of animal Bodies: the Sawduſt of it is thought to be one of the Secrets uſed by thoſe Mountebanks who pretend to have the embalming Myſtery. This Wood is alſo ſaid to yield an Oil which is famous for preſerving Books and Writings; and the Wood is thought, by the Lord *Bacon*, to continue above a thouſand Years ſound. It is alſo recorded, that in the Temple of *Apollo* at *Utica*, there was found Timber of near two thouſand Years old. And the Statue of the Goddeſs, in the famous *Epheſian* Temple, was ſaid to be of this Material alſo, as was moſt of the Timber-work of that glorious Structure.

This Sort of Timber is very dry, and ſubject to ſplit; nor does it well endure to be faſten'd with Nails, from which it uſually ſhrinks; therefore Pins of the ſame Wood are much preferable.

LARKSPUR. *Vide* Delphinium.

LASERPITIUM, Laſerwort.

The *Characters* are;

It hath an umbellated Flower, compoſed of five heart-ſhaped Leaves, which are equal, and expand in form of a Roſe, and reſt on the Empalement, which afterward turns to a Fruit compoſed of two Seeds, which are gibbous on one Side, with four *large foliaceous Wings, which extend the Length of the Fruit, and are ſhaped like a Water-mill.*

The *Species* are;

1. LASERPITIUM *foliis latioribus lobatis. Mor. Umbel.* Laſerwort with broader Leaves.

2. LASERPITIUM *foliis amplioribus, ſemine criſpo. Inſt. R. H.* Laſerwort with large Leaves, and curl'd Seeds.

3. LASERPITIUM *humilius, paludapii folio, flore albo. Inſt. R. H.* Lower Laſerwort, with a Smallage-leaf, and a white Flower.

4. LASERPITIUM *Gallicum. C. B. P. French* Laſerwort.

5. LASERPITIUM *anguſtiſſimo & oblongo folio. Inſt. R. H.* Laſerwort with a very narrow oblong Leaf.

6. LASERPITIUM *ſelinoides, ſemino criſpo. Inſt. R. H.* Laſerwort reſembling ſweet Smallage, with a curl'd Seed.

7. LASERPITIUM *anguſtifolium, umbella contracta & concava. Inſt. R. H.* Narrow-leav'd Laſerwort, with a contracted and hollow Umbel.

8. LASERPITIUM *Orientale, foliis ſeſeleos Maſſilienſis, flore luteo. Cor. Inſt. R. H. Eaſtern* Laſerwort, with Leaves like the *Marſeilles* Hartwort, and a yellow Flower.

There are ſeveral other Varieties of this Plant, which are enumerated in Botanic Authors; but ſome of them only differ in the Colour of their Flowers, and the Indentures of their Leaves; ſo muſt not be deemed as diſtinct Species. Indeed the Number of Species has been greatly leſſen'd by ſome late Writers, who have erred as much in leſſening, as thoſe before them had done in multiplying, of the Species; which Miſtake they may have fallen into by ſowing of the Seeds near old Plants of the ſame Genus, or on Ground where ſome of theſe Sorts have grown; ſo that their Seeds have been ſcattered and buried in the Ground, where they will remain two or three Years, and afterward grow; ſo that unleſs their Seeds are ſown at a Diſtance from any of the other Species, there will always be a Mixture of Plants come up, whereby People have been often confus'd in diſtinguiſhing theſe Plants; nay, I have frequently obſerved the Seeds of one Species fall, and the Plants come up on the Head of another Plant which grew near it; and this young Plant, if not timely rooted out, has gotten the better of the old Plant, and deſtroyed it: where there is not great Care taken to prevent this, the different Sorts cannot be preſerved in Gardens where the Species grow near each other.

It is generally ſuppoſed, that the *Silphium* of the Antients was procured from one Species of this Genus; but from which of them we are at preſent ignorant. All the Species, if wounded, drop a very acrid Juice, which turns to a reſinous gummous Subſtance very acrimonious. This was externally applied by the Antients to take away black and blue Spots that came by Bruiſes and Blows, as alſo to take away Excreſcences: it was alſo by ſome of the Antients preſcribed in internal Medicines; but others have cautioned People not to make uſe of it this way, from the Effects which they mention to have ſeen produced from the Violence of its Acrimony.

All theſe Plants are extreme hardy; ſo will thrive in moſt Soils and Situations. They are propagated by Seed, which if ſown in the Autumn, the Plants will come up the following Spring; but when they are ſown in the Spring, the Seeds commonly remain in the Ground a whole Year. The Plants ſhould be tranſplanted the following Autumn, where they are deſigned to remain; for they ſend out long deep Roots, which are frequently broken: when the old Plants are removed, they ſhould be planted three Feet aſunder; for the Plants grow very large. They decay to the Ground every Autumn, and come up again the following Spring; but the Roots will continue many Years, and require no other Culture, but to clear them from Weeds, and to dig between the Roots every Spring.

LATHYRUS, Chichling Vetch.

The *Characters* are;

It hath a papilionaceous Flower, out of whoſe Empalement riſes the Pointal, cover'd with a membranaceous Sheath, which afterward becomes a Pod, ſometimes round, ſometimes cylindrical, and at other times angular: to which may be added, It hath a compreſs'd Stalk, with a raiſed Rib, and a leafy Border; and has only one Pair of Leaves, growing on the Nerves, which terminates in a Tendril.

The *Species* are;

1. Lathyrus *latifolius. C. B.* Broad-leav'd or common Everlaſting-Peas.

2. Lathyrus *latifolius minor, flore majore. Boerh. Ind.* Leſſer broad-leav'd Everlaſting-Peas, with a larger Flower.

3. Lathyrus *major Narbonenſis anguſtifolius. C. B.* Greater narrow-leav'd Everlaſting-Peas.

4. Lathyrus *arvenſis repens tuberoſus. C. B.* Creeping Chichling, or Peas Earth-nut, with a tuberoſe Root.

5. Lathyrus *Tingitanus, ſiliquis orobi, flore amplo ruberrimo. Mor. Hiſt. Tangier* Chichling, with a large deep-red Flower.

6. Lathyrus *diſtoplatyphyllus hirſutus mollis, magno & peramœno flore odoro. Hort. Cath.* Broad-leav'd hairy ſoft Chichling, with a large and very beautiful purple ſweet-ſmelling Flower, commonly call'd Sweet-ſcented Peas.

7. Lathyrus *ſativus, flore fructuque albo. C. B. P.* Garden Chichling Vetch, with white Flowers and Fruit.

8. Lathyrus *ſativus, flore purpureo. C. B. P.* Garden Chichling Vetch, with a purple Flower.

9. Lathyrus *ſylveſtris major. C. B. P.* Great wild Chichling Vetch.

10. Lathyrus *ſylveſtris major, flore atro-purpureo. Inſt. R. H.* Great wild Chichling Vetch, with a dark-purple Flower.

11. Lathyrus *latifolius, flore albo. Inſt. R. H.* Everlaſting-Pea, with a white Flower.

12. Lathyrus *anguſtifolius, ſemine maculoſo. C. B. P.* Narrow-leav'd Chichling Vetch, with a ſpotted Seed.

13. Lathyrus *anguſtiſſimo folio, Americanus variegatus. C. B. P.* The moſt narrow-leav'd *American* Chichling Vetch, with a variegated Flower.

14. Lathyrus *annuus, flore cœruleo, ochri ſiliqua. H. L. B.* Annual Chichling Vetch, with a blue Flower, and a Pod ſhaped like Ochrus.

15. Lathyrus *Bæticus, flore luteo. Park. Theat. Spaniſh* Chichling Vetch, with a yellow Flower.

16. Lathyrus *luteus latifolius. Bot. Monſp.* Broad-leav'd yellow Chichling Vetch.

17. Lathyrus *anguſtifolius, ſiliqua hirſuta. C. B. P.* Narrow-leav'd Chichling Vetch, with an hairy Pod.

18. Lathyrus *latifolius annuus, ſiliqua articulata hirſutiore. H. R.*

Par. Broad-leav'd annual Chichling Vetch, with a very rough-jointed Pod.

19. Lathyrus *anguſtiſſimo folio, ſemine rotundo. H. R. Par.* Narrow-leav'd Chichling Vetch, with a round Seed.

20. Lathyrus *anguſtiſſimo folio, ſemine anguloſo. H. R. Par.* Narrow-leav'd Chichling Vetch, with an angular Seed.

The three firſt Sorts are abiding Plants, which ſend forth ſtrong downright Roots very deep into the Earth; for which Reaſon they ſhould not be often removed, which would prevent their growing ſtrong, or producing many Flowers.

They are propagated by Seeds, which ſhould be ſown in the middle of *March*, upon a Bed of light freſh Earth; covering them about half an Inch deep. But the beſt Method is, to make a ſhallow Drill in the Ground, and then drop the Seeds therein, about ſix Inches Diſtance: theſe Drills ſhould be a Foot aſunder, for the Conveniency of hoeing and cleaning the Ground between them; which muſt conſtantly be done, otherwiſe the Weeds will overbear and deſtroy them: but they will require no farther Care, being very hardy Plants, until the Spring following; at which time (*viz.* in *March*) juſt before they begin to ſhoot, the Roots ſhould be carefully taken up, and tranſplanted where they are to continue, placing them at leaſt three Feet aſunder; otherwiſe they will over-run each other, or whatever Plants ſtand near them. If the Seaſon ſhould prove dry, you muſt give them ſome Water, to ſettle the Earth to their Roots; which ſhould be now-and-then repeated, if it continue dry Weather, until the Plants have taken Root: after which, they will require no farther Culture but to keep them clear from Weeds, and in the Summer to ſupport them with ſtrong Stakes, otherwiſe they will trail upon the Ground, and rot the Branches, and deſtroy whatever Plants grow near them.

Theſe Plants are very proper to plant againſt a dead Hedge, where they will run over it; and if they be kept train'd up, will cover it in the Summer, and in ſuch Places they will produce great Quantities of Flowers; but if they are planted in a Flower garden, they muſt have a great deal of room; and in Summer ſhould have very ſtrong Stakes placed down by them, to which they muſt be cloſely faſten'd, otherwiſe they will ramble, and trail upon the Ground, and appear very unſightly; for if the Ground be good in which they are planted, and the Roots are very ſtrong, they will ſometimes grow eight or ten Feet high in a Seaſon, and produce abundance of Flowers; which are very ornamental in Baſons or Pots of Flowers, to place in Chimneys, or other Parts of large Rooms. Theſe produce their Flowers in *June* and *July*, and their Seeds are perfected in *Auguſt*; their green Leaves decay in Autumn, and riſe again the ſucceeding Spring, their Roots continuing good for many Years: they delight moſt in a light Soil, not too dry, nor over-wet; but will grow in almoſt any Soil or Situation, but beſt in that which is expos'd to the Sun.

The firſt Sort is moſt commonly cultivated in the *Engliſh* Gardens; but the ſecond is much preferable to that, as being of humbler Growth, never riſing above five Feet high, and ſo is more proper for Flower-gardens; and the Flowers are much larger, and of a deeper red Colour, and are commonly produced in larger Cluſters. The third Sort is ſeldom propagated in Flower-gardens, though for Variety it ſhould have a Place amongſt other large Plants. The Flowers of this Kind are ſmaller, and of a purple Colour.

The tuberoſe-rooted Sort is preſerv'd as a Curioſity in many Gardens, tho' there is no great Beauty in its Flowers. This may be propagated either by Seeds, as the others, or by its Roots, which increaſe very faſt under-ground; and is an abiding Plant, but ſhould not be placed among other curious Flowers; for the Roots, propagating under-ground, will come up, and ſpread over whatever Plants grow near them. The Roots of this Sort are commonly eaten in *Holland*, where the Plant is frequently cultivated in their Kitchen-gardens. Theſe Roots are about the Size of a Nutmeg; and, when roaſted, have the Taſte of Cheſtnuts.

The fifth and ſixth Sorts are annual Plants, which are propagated only by Seeds: theſe may be ſown in *March*, in the Places where they are to remain for good; being Plants that ſeldom will grow, if tranſplanted, except it be done while they are very young. Theſe ſhould be either ſown near a Pale, Wall, or Eſpalier, to which they may be train'd; or if ſown in the open Borders, ſhould have Stakes placed by them, to which they ſhould be faſten'd; otherwiſe they will trail upon the Ground, and appear very unſightly; which is the only Culture theſe Plants require, except the clearing them from Weeds. They produce their Flowers in *July*, and their Seeds are perfected in *Auguſt* and *September*.

But the beſt Method to have them very ſtrong is, to ſow their Seeds in *Auguſt*, under a warm Wall or Hedge, where they will come up in Autumn, and abide the Winter very well; and theſe will begin to flower in *May*, and continue to produce freſh Flowers until *July*, or later, according to the Heat of the Seaſon: and one of theſe autumnal Plants will be as large as four or five of thoſe ſown in the Spring, and produce ten times the Number of Flowers; and upon theſe Plants you will always have good Seeds, when ſometimes the other will miſcarry; however, it is very proper to ſow their Seeds at two or three different Seaſons, in order to continue their Flowers the longer; for the late-planted ones will continue blowing until the Froſt prevents them.

The ſweet-ſcented Sort is the moſt valuable, both for the Beauty and Fragrancy of its Flowers.

Of this Sort there are two other Varieties: one of theſe has pale-red Flowers, which is commonly called by the Gardeners, Painted-lady Peas; the other hath intire white Flowers: both theſe may be allowed a Place in the Borders of the Flower-garden, for the ſake of Variety.

The ſeventh Sort here mentioned is frequently cultivated for Uſe in ſeveral Parts of *Europe*; but in *England* it is rarely to be met with, unleſs it be in Botanic Gardens, where it is preſerved for the ſake of Variety. This Plant may be cultivated in the ſame manner as Tares, and may be uſed for the ſame Purpoſes; but the beſt Method is, to ſow them in Drills about eighteen Inches aſunder, and keep the Ground hoed with a Plough to deſtroy the Weeds between the Rows, in the ſame manner as is practiſed for Peas; by which Method the Plants will thrive exceedingly, and become a great Improvement to poor ſandy Land.

The eighth Sort is a Variety of the ſeventh, from which it only differs in the Colour of the Flower; this having a fine purple Flower, and is by many Perſons ſowen in Gardens by way of Ornament. If the Seeds of this Sort are ſowen in Autumn, the Plants will come up, and abide the Winter very well; ſo will flower the following *May*; but if the Seeds are ſown in Spring, the Plants will not flower till *July* or *Auguſt*: ſo that by ſowing at the two different Seaſons, theſe may be continued in Beauty for ſeveral Months.

The ninth Sort has been by ſome Perſons ſown for Feed for Cattle: but it doth not anſwer near ſo well for this Purpoſe as the firſt Sort; ſo is not worth cultivating. The tenth Sort is a Variety of the firſt, from which it differs in the Colour of the Flower; ſo is preſerved by the Curious in Botany, for the ſake of Variety.

The eleventh Sort is a Variety of the common Everlaſting-Pea: the Flowers of this, being white, are preſerved by ſeveral Perſons for the Variety; but it is not ſo beautiful as the common Sort. This may be propagated in the ſame manner as is directed for the common Sort.

The nine following Sorts are preſerved in ſome curious Gardens for the Variety of their Flowers. Theſe may all of them be propagated by ſowing their Seeds, either in Spring or Autumn; but thoſe which are ſowen in Autumn ſhould have a light Soil, and a warm Situation, where the Plants will abide the Winter, and come to flower early the following Spring, and their Seeds will ripen in *July*: but thoſe which are ſown in the Spring, ſhould have an open Expoſure, and may be planted upon almoſt any Soil; for they are not very tender Plants in their Culture. Theſe Sorts ſhould all of them be ſown where they are deſigned to remain; for they ſeldom ſucceed, when they are tranſplanted: ſo that where they are ſown for Ornament, there ſhould be ſix or eight Seeds ſown in a ſmall Patch, in different Parts of the Borders of the Flower-garden; and when the Plants come up, they ſhould be carefully kept clear from Weeds; but when they are grown two or three Inches high, there ſhould be ſome Sticks put down by them to ſupport them; otherwiſe they will trail on the Ground, and become unſightly; beſides, they will trail on whatever Plants grow near them.

LAVATERA.

The *Characters* are;

The Leaf, Flower, Style, and Cup of the Flower, have the Appearance of a Mallow: the Style becomes a Fruit, which is arm'd in Front with an hollow Shield; the Seeds, which are ſhaped like a Kidney, growing to the inner Part.

The *Species* are;

1. **Lavatera** *folio & facie althææ. Tourn.* Lavatera with the Leaf and Face of Marſhmallow.

2. **Lavatera** *folio & facie althææ, flore albo.* Lavatera with the Leaf and Face of Marſhmallow, and a white Flower.

3. **Lavatera** *Africana, flore pulcherrimo. Boerh. Ind. African* Lavatera, with a moſt beautiful Flower.

4. **Lavatera** *foliis ovato-lanceolatis, inferne angulatis, pedunculis unifloris, caule herbaceo. Flor. Leyd.* Lavatera with oval ſpear-ſhaped Leaves, the under Leaves angular, one Flower upon each Footſtalk, and an herbaceous Stalk, commonly called, Mallow with variable Leaves.

Theſe are all annual Plants, which

are propagated by Seeds: the Seaſon for ſowing them is in *March*, upon a Bed of freſh light Earth; and when the Plants are come up, you muſt carefully clear them from Weeds; and, in very dry Weather, they muſt be now-and-then refreſh'd with Water. When they are about two Inches high, you muſt tranſplant them into the Places where they are deſign'd to remain, which ſhould be in the middle of the Borders in the Flower-garden; for, if the Soil be good, they will grow two or three Feet high: in tranſplanting them, you muſt take them up very carefully, preſerving a Ball of Earth to their Roots, otherwiſe they are apt to miſcarry: and alſo water and ſhade them until they have taken Root; after which they will require no other Care but to clear them from Weeds, and to faſten them to Stakes, to prevent their being injur'd by ſtrong Winds. You may alſo ſow their Seeds in Autumn; and when the Plants are come up, tranſplant them into ſmall Pots, which, toward the End of *October*, ſhould be placed into a common Hot-bed-frame, where the Plants, being defended from ſevere Froſts, will abide the Winter very well; and in the Spring, you may ſhake them out of the Pots, and plant them into larger, or elſe into the full Ground, where they may remain to flower. The Plants, thus manag'd, will be larger, and flower ſtronger and earlier, than thoſe ſown in the Spring; and from theſe you will conſtantly have good Seeds; whereas thoſe ſown in the Spring ſometimes miſcarry. When the Seeds of theſe Plants are ſown in the Spring, it ſhould be in the Place where they are to remain; for they do not well bear removing in the Summer.

Theſe produce their Flowers in *June*, *July*, and *Auguſt*; and their Seeds ripen ſoon after.

They are very ornamental Plants in a fine Garden, when placed among other Annuals, either in Pots or Borders: their Flowers are very like thoſe of the Mallow; but are larger, and of a more beautiful Colour.

LAVENDULA, Lavender.

The *Characters* are;

It is one of the verticillate Plants, whoſe Flower conſiſts of one Leaf, which is divided into two Lips: the Upper-lip, ſtanding upright, is roundiſh, and for the moſt part bifid; but the Under-lip is cut into three Segments, which are almoſt equal: theſe Flowers are diſpoſed in Whorles, and are collected into a ſlender Spike upon the Top of the Stalks.

The *Species* are;

1. LAVENDULA *latifolia. C. B.* Common broad-leav'd Lavender.

2. LAVENDULA *anguſtifolia, C. B.* Common narrow-leav'd Lavender, commonly call'd Spike-lavender.

3. LAVENDULA *latifolia ſterilis. Mor. Hiſt.* Broad-leav'd barren Lavender.

4. LAVENDULA *anguſtifolia, flore albo. C. B. P.* Narrow-leav'd Lavender, with white Flowers.

5. LAVENDULA *folio diſſecto. C. B.* Cut-leav'd Lavender.

6. LAVENDULA *folio diſſecto, flore albo. Boerh. Ind.* Cut-leav'd Lavender, with a white Flower.

7. LAVENDULA *folio longiore, tenuius & elegantius diſſecto. Tourn.* Lavender with a longer and more beautiful fine-cut Leaf, commonly call'd *Canary* Lavender.

8. LAVENDULA *latifolia Indica ſubcinerea, ſpica breviore. H. R. Par.* Broad-leav'd *Indian* Lavender, with a ſhort Spike

9. LAVENDULA *latifolia Hiſpanica tomentoſa. Inſt. R. H.* Broad-leav'd woolly *Spaniſh* Lavender.

10. Lavendula *latifolia, flore albo. C. B. P.* Broad-leav'd Lavender, with a white Flower.

The firſt of theſe Species, tho' very common in moſt Parts of *Europe*, yet in *England* is rarely to be found, notwithſtanding it is as eaſily propagated as any of the other Sorts.

The ſecond is the moſt common Sort in the *Engliſh* Gardens, being propagated for medicinal Uſes, *&c.*

The third Sort is a Degeneracy from the ſecond, having much broader and greener Leaves, but rarely ever flowers while it continues with the Leaves broad; but whenever it flowers, the Leaves of that Part of the Plant become narrow again.

The fourth Sort is alſo a Variety of the ſecond, from which it differs in the Colour of the Flowers; which in this Sort are white, and thoſe of the ſecond are blue.

Theſe are all propagated by Cuttings or Slips; the beſt Seaſon for which is in *March*, when you ſhould plant them in a ſhady Situation, or at leaſt ſhade them with Mats until they have taken Root; after which they may be expoſed to the Sun, and when they have obtain'd Strength, may be remov'd to the Places where they are deſign'd to remain. Theſe Plants will abide the longeſt in a dry, gravelly, or ſtony Soil, in which they will endure our ſevereſt Winters; though they will grow much faſter in the Summer, if they are planted upon a rich light moiſt Soil; but then they are generally deſtroy'd in Winter; nor are the Plants half ſo ſtrong-ſcented, or fit for medicinal Uſes, as thoſe which grow upon the moſt barren rocky Soil.

The firſt and ſecond Sorts may alſo be propagated from Seeds, which ſhould be ſown in *March* upon a dry undung'd Soil; and when the Plants are come up, they muſt be carefully clear'd from Weeds, until they are about two Inches high; when they ſhould be tranſplanted into other Beds, allowing them a Foot Diſtance each Way: in theſe Beds they may remain to be cut for Uſe; or you may afterward tranſplant them into dry Borders or Beds, in any other Place where you would have them ſtand, obſerving never to dung the Ground where they are planted; which would cauſe them to grow vigorouſly in Summer, but will haſten their Decay, as was before obſerv'd.

The eighth Sort is mentioned in moſt of the Books on Botany, as a diſtinct Species; but I rather believe it to be only a Variety of the third Sort; for I have often found this to vary in the ſame manner as that.

The tenth Sort is a Variety of the firſt, from which it only differs in the Colour of the Flowers.

The ninth Sort hath woolly Leaves and Branches, in which it differs from the firſt Sort: but this, when planted in a rich Soil, will alter; and is often ſo like the firſt, as hardly to be diſtinguiſh'd from it.

Theſe may be propagated in the ſame manner as the common Lavender, and are equally hardy.

Theſe Plants were formerly in Uſe to make Edgings to Borders in Gardens; for which Purpoſe they are by no means proper; for they will grow too large for ſuch Deſigns; and if they are often cut in very dry Weather, they are ſubject to decay; and in hard Winters they are very often kill'd, ſo that the Edging will not be complete: beſides, theſe Plants greatly exhauſt the Goodneſs of the Soil, whereby the Plants in the Borders will be depriv'd of their Nouriſhment; ſo that they ſhould never be planted in a fine Garden amongſt other choice Plants and

Flowers, but rather be placed in Beds in the Phyſic-garden. Theſe Plants producetheir Flowers in *June* and *July*; at which time they ſhould be gather'd, and dry'd in a ſhady Place, and preſerved dry for Uſe.

The fifth and ſixth Sorts are commonly ſown every Spring on Borders or Beds of freſh light Earth; and when the Plants come up, they may be tranſplanted into other Borders of the Flower-garden, or into Pots, to remain for good; where they will produce their Flowers in *July* and *Auguſt*, and their Seeds are ripe ſoon after. Theſe are pretty Plants to place in large Borders, amongſt other Plants, for Variety; but they are never uſed with us: they may alſo be preſerved over the Winter, if placed into a Green-houſe in Autumn: but they ſeldom continue longer than two Years with us, and many times (if they have produced Seeds the firſt Year) they will not continue longer. Theſe Plants will ſometimes grow from Cuttings; but then the Cuttings muſt be ſtrong, and inclinable to be woody; for if they are very ſoft and ſpongy, they ſeldom ſucceed; and they ſhould alſo be placed upon a moderate Hot-bed, which will greatly promote their taking Root. This Method is ſometimes neceſſary to preſerve the Sorts, which might otherwiſe be in Danger of being loſt.

The ſeventh Sort is tenderer than either of the former; ſo the Seeds of this muſt be ſown on a moderate Hot-bed in the Spring; and when the Plants come up, they ſhould be each planted into a ſeparate ſmall Pot filled with light Earth, and plunged into another Hot-bed, to bring the Plants forward; and in the Beginning of *June*, they ſhould be inured to the open Air, where they ſhould be placed in a ſheltered Situation toward the End of that Month: in *July* the Plants will flower, and if the Autumn proves warm, the Seeds will ripen in *September*: but when they do not perfect Seeds, the Plants may be preſerved through the Winter in a good Green-houſe; where they will produce Flowers moſt Part of that Seaſon, and the next Seaſon good Seeds may be obtained.

The Leaves of this Sort are much finer cut than thoſe of the other; and there are ſeveral Spikes of Flowers growing cloſely together at the Extremity of the Branches; by both which it is eaſily diſtinguiſhed from the other Sort, tho' ſome Perſons have ſuppoſed they were not different Plants.

LAUREOLA. *Vide* Thymelæa.

LAUROCERASUS. *Vide* Padus.

LAURUS, The Bay-tree.

The *Characters* are;

It hath a Flower conſiſting of one Leaf, which is ſhaped like a Tunnel, and divided into four or five Segments: the Male Flowers (which are produced on ſeparate Trees from the Female) have eight Stamina, *which are branched into Arms: the Ovary of the Female Flowers becomes a Berry, incloſing a ſingle Seed within an horny Shell which is covered with a Skin.*

The *Species* are;

1. LAURUS *vulgaris. C.B.* The common Bay, with Male Flowers.

2. LAURUS *vulgaris fœmina. Boerh. Ind.* The common fruit-bearing Bay-tree.

3. LAURUS *vulgaris, folio elegantiſſime variegato aureo. Boerh. Ind.* The Gold-ſtriped Bay-tree, *vulgo.*

4. LAURUS *vulgaris, folio undulato. H. R. Par.* The common Bay-tree, with waved Leaves, and Male Flowers.

5. LAURUS *vulgaris, folio undulato, fœmina. Boerh. Ind.* The

Berry-bearing Bay-tree, with waved Leaves.

6. Laurus *tenuifolia. Tab. Icon. Mas.* The narrow-leav'd Bay, with Male Flowers.

7. Laurus *tenuifolia fœmina. Boerh. Ind.* The narrow-leav'd Berry-bearing Bay-tree.

8. Laurus *latiori folio. Lugd. Mas.* The broad-leav'd Bay-tree, with Male Flowers.

9. Laurus *latifolia fœmina. Ind.* The broad-leav'd Berry-bearing Bay-tree.

10. Laurus *Indica. Hort Farneſ. Ald.* The broad-leav'd *Indian* Bay-tree, commonly call'd Wild Cinnamon.

11. Laurus *foliis integris & trilobatis. Lin. Hort. Cliff.* The Saſſafras-tree.

12. Laurus *foliis enervibus obverſe ovatis utrinque acutis integris annuis. Lin. Hort. Cliff.* The Benjamin tree.

13. Laurus *foliis ovatis utrinque acuminatis trinerviis nitidis, petiolis laxis. Lin. Hort. Cliff.* The Camphor-tree.

14. Laurus *Americana mas, foliis ſubrotundis, floribus in capitulum collectis. Houſt. MSS.* Male *American* Bay, with roundiſh Leaves, and Flowers collected in an Head.

15. Laurus *Americana fœmina, foliis ſubrotundis, fructu albo umbellato. Houſt. MSS.* Female *American* Bay, with roundiſh Leaves, and white Fruit growing in an Umbel.

The firſt and ſecond Sorts are old Inhabitants of the *Engliſh* Gardens; and as they are Varieties obtained from the ſame Seeds, ſo they are promiſcuouſly cultivated, and are not to be diſtinguiſhed aſunder, until they have produced Flowers.

Theſe Plants are propagated either from Seeds, or by laying down the tender Branches, which will take Root in one Year's time, and may then be taken off, and tranſplanted either into a Nurſery, or the Places where they are deſign'd to remain. Theſe Trees are often propagated from Suckers, which they put out in plenty from their Roots (eſpecially thoſe Trees which were produced from Suckers): but theſe never grow ſo large, nor are ſo handſome, as thoſe which are raiſed from the Berries: and as theſe are very ſubject to put out Suckers from their Roots, ſo they ſpread, and fill the Ground with young Plants; whereby the principal Plants are ſtarved, and make but little Progreſs. But if you would propagate them from Seeds, you muſt gather them from the Trees in *November* (at which time they commonly are ripe), and preſerve them in Sand until the Beginning of *March*, when you muſt prepare a Bed of light dry Earth, which ſhould be ſituated in a warm Place, where the Plants may be defended from the North and Eaſt Winds. This Bed muſt be levell'd exactly even, and then draw ſome Furrows croſs it at about eight Inches Diſtance, and an Inch deep, into which you ſhould drop the Seeds, about two Inches aſunder; then cover them with Earth; and if the Seaſon ſhould prove very dry, you muſt often refreſh them with Water. In about two Months time the young Plants will appear above-ground, when you muſt carefully clear them from Weeds; and in dry Weather if you refreſh them with Water, it will greatly promote their Growth. In theſe Beds they ſhould continue two Years, by which time they will be large enough to tranſplant; you muſt therefore make choice of a warm dry Spot of Ground, which ſhould be well dug, and cleans'd from Weeds, and Roots of Trees, *&c.* and laid even; then mark out the Lines three Feet diſtant from each other; and having taken up the Plants carefully with a Ball of Earth to their Roots, you muſt plant them exactly ſtrait in the Rows, at eighteen Inches aſunder, obſerving to water them well, as alſo to lay ſome Mulch upon the Surface of the Ground, near the Stems, to preſerve the Ground from drying too faſt. The beſt Seaſon for removing theſe Trees is in *April*, juſt before they begin to ſhoot, or in a dry Soil about *Michaelmas*.

During the time theſe Plants remain in the Nurſery, you muſt obſerve to keep them clear from Weeds, digging the Ground between the Rows every Spring; as alſo to faſten the Shoots of the Plants to ſtrait Stakes, to prevent their growing crooked and unſightly; and alſo obſerve to prune off the Under-ſhoots, to make them advance in Height: but I can by no means recommend the ſhearing of theſe Plants into conical or pyramidal Figures (as is often practiſed) for the ſame Reaſon as I gave for the Laurel; *viz.* that the Leaves, being large, are cut in Pieces, whereby the Plants are rendered very unſightly; but rather, that they ſhould be improved, ſo as to make large Trees, to which they are naturally diſpos'd to grow, could we prevent the Shears from continually gnawing them.

Theſe Trees are very proper to plant upon the warm Sides of dry Hills, where they may be protected from the ſevere Blaſts of the North and Eaſt Winds; in which Situations I have ſeen ſome of theſe Trees upward of thirty Feet in Height, which is a plain Indication of their large Growth.

But I know it will be objected, that theſe Trees are often deſtroyed by hard Winters, and ſo are improper to make large Plantations of in *England*. That they have been ſometimes killed by ſevere Winters, I can't deny: but if they are brought up thus hardily, as has been directed, and not ſhear'd, I dare affirm, they will reſiſt the ſevereſt Cold of our Climate, when grown to a moderate Age, provided they are planted in a dry Soil; in which, tho' their Leaves ſhould be intirely ſhrivell'd by extreme Cold, yet if permitted to remain undiſturbed, and not cut, they will ſhoot again in the ſucceeding Summer, as I have more than once experienced. And in the hard Winter, *Anno* 1739. when moſt of the Bay-trees ſeemed to be deſtroyed which grew abroad, and many People were ſo inconſiderate as to dig them up, and throw them away, it was obſervable, that all thoſe which were permitted to ſtand did ſhoot out again in the ſucceeding Summer, and recovered their uſual Verdure: which ſhould caution every Perſon, not to be overhaſty in condemning Trees to the Fire, but to wait for the Succeſs of a whole Seaſon, before they are pulled up.

Bay-leaves dry'd, and reduced to Powder, as much as will cover an Half-crown, being drank in a Glaſs of White-wine, are ſaid ſeldom to fail of curing an Ague. Theſe Leaves are alſo uſed in divers Sawces in the Kitchen, and the Berries are often uſed in Medicine.

The Gold-ſtriped Bay is much more tender than the common Sort; for which Reaſon it muſt be planted in Pots, and houſed in Winter with Oranges, Myrtles, *&c.* and muſt be placed ſo as to have as much free Air in mild Weather as poſſible, and will require to be frequently water.

tered. This Plant may be propagated by Layers, or by budding it upon the common Bay: but you muſt not plant it into very rich Earth, which will cauſe it to grow vigorouſly, whereby it will become quite plain; but, on the contrary, let it have a freſh light ſandy Soil, in which it will very well preſerve its beautiful Stripe.

The 4th, 5th, 6th, 7th, 8th, and 9th Sorts are commonly preſerved in Pots or Tubs, and placed in the Green-houſe with Oranges, Myrtles, *&c.* But I dare ſay, either of theſe Sorts will thrive in the open Air, if planted in a warm dry Soil, and defended from the North and Eaſt Winds; but eſpecially the broad-leav'd Sort, which, I have experienced, will endure more Cold than the common Bay: but as they are leſs common, ſo they are generally preſerved with more Care; tho' they may either of them be propagated in as great Plenty either by Layers or Seeds; for they will bear great Plenty of Berries, provided they are not kept ſhear'd; and theſe Berries will riſe full as well, and, many times, out-grow the common Bay, as I have frequently obſerved: ſo that why we have not theſe Trees in as great Plenty as the common Sort, is only owing to their not being propagated and planted abroad; moſt People imagining, becauſe they have been hitherto treated with great Care, that therefore they will not endure the Cold: which is a great Miſtake; for we have found, by repeated Trials, which have been made within a few Years paſt, that many of thoſe Plants which had been nurſed up in Green-houſes with great Care (whereby their Roots were confin'd, and the Plants circumſcrib'd and ſtarv'd in their Growth), when planted abroad, have made great Progreſs, and defy'd the moſt ſevere Cold of our Climate to injure them: which is a great Encouragement to proceed in our Trials of this Kind; ſince, by this Method, we may naturalize a great Variety of valuable Trees and Plants to our Country, which may hereafter be found of great Benefit. Nor ſhould we be diſcouraged, if, in the firſt Attempt, we ſhould not ſucceed ſo well as we might wiſh; for, by ſeveral Eſſays, we may overcome the Difficulty; and then the Pleaſure of having denizen'd any Exotic Trees, will ſufficiently compenſate the Trouble, ſince hereby we eſtabliſh living Monuments of Praiſe.

The *Indian* Bay is too tender to endure our cold Winters abroad as yet: tho' I doubt not but that when theſe Plants are very ſtrong and woody, and ſome Care taken in their firſt Expoſure, they may be brought to thrive in the open Air; which if once obtain'd, ſo as to have Seeds produced in *England*, the Off-ſpring will be better inured to our Climate. And if this Plant can be once well naturaliz'd, ſo as to grow as in the warmer Parts of *Europe*, it will be one of the nobleſt Ever-greens, for Shade and Beauty, we ever obtained; for it is naturally a very ſtrait-growing Tree, and the Leaves are very broad, and of a ſhining-green Colour, which renders it very agreeable.

This Plant is propagated by Seeds (which are eaſily procured from *Portugal*, where theſe Trees grow in great Plenty); they ſhould be put into Pots filled with freſh light Earth, and plunged into a gentle Hot-bed, to facilitate their Growth; and when the Plants are come up, you ſhould remove the Pots into another moderate Hot-bed, to forward them, where they ſhould remain until the

Beginning of *June*, when you muſt harden them by degrees, to endure the open Air, into which they ſhould be removed about the Middle of that Month, obſerving to place the Pots in a well-ſheltered Situation; and in dry Weather you muſt often refreſh them with Water. The Beginning of *October* you muſt remove the Pots into the Green-houſe, placing them near the Windows, that the Plants may have as much free Air as poſſible in mild Weather; and obſerve that they do not ſuffer with Drought; for they will require to be frequently refreſhed with Water. In *April* following you muſt take the Plants out of the Pots, preſerving the Roots, and put each into a ſeparate Pot filled with the before-mentioned freſh light Earth: then plunge them into a moderate Hot-bed for a Month or ſix Weeks, to haſten their taking Root; which done, you muſt harden them again, and expoſe them to the open Air, as before: and in Winter they muſt be houſed again, obſerving the Directions before given. After five or ſix Years thus managing them (ſtill obſerving every Year to let them continue longer out of the Houſe in Autumn, than the preceding), you ſhould in *April* plant ſome of them into the full Ground, in a warm well-ſheltered Situation, that they may have good Rooting in the Ground before the Winter comes on: and in Autumn you muſt lay a little Mulch upon the Surface of the Ground, to prevent the Froſt from penetrating to their Roots: but if the Winter following ſhould prove ſevere, you ſhould twiſt a Band of Hay or Straw round their Stems, which will be of great Service to protect them from Cold: and after they have endured two or three Winters abroad, they will be pretty much out of Danger; for tho' a very hard Winter may afterwards kill ſome of their Branches, yet they will ſhoot again the following Summer.

I had a large Plant of this Kind, which had been planted in the full Ground in the Spring 1739. which was killed to the Ground by the following hard Winter, and, as I then imagin'd, totally deſtroyed: but the following Summer it put out from the Roots very ſtrong, and, had the Stem of the Plant been defended, I believe it would have put out again above.

The Saſſafras-tree is a Native of *North-America*, where it commonly grows on low ſwampy Ground: it never riſes to any great Height, nor are their Stems very large; ſo may be ranged amongſt the Shrubs: the Roots of theſe Shrubs ſpread underground; and in their native Soil put out great Quantities of Suckers: but in *England* it is very difficult to preſerve the Plants long; for in very ſevere Winters they are commonly deſtroyed by the Cold; and in warm dry Summers they are often killed by Drought, unleſs they are planted in a very moiſt Soil: nor do theſe Shrubs thrive well when they are ſheltered in a Green-houſe in Winter; therefore the beſt Way is to plant them in the open Air, in a ſheltered Situation, and a light moiſt Soil, where they will thrive better than with any other Management: in ſuch Places I have ſeen ſome of theſe Plants upward of ſeven Feet high, and pretty well furniſhed with Branches.

This is commonly propagated by the Berries, which are brought from *America* (for they do not produce any in *England*); but theſe Berries generally lie in the Ground a whole Year, and ſometimes two or three Years, before they grow; therefore the ſureſt Method of obtaining the Plants will be, to get the Berries put into a Tub of Earth ſoon after they are ripe, and ſent over in the Earth; and as ſoon as they arrive, to ſow the Berries on a Bed of light Ground, putting them two Inches into the Earth: and if the Spring ſhould prove dry, the Bed muſt be frequently watered, and ſhaded from the great Heat of the Sun in the middle of the Day: with this Management many of the Plants will come up the firſt Seaſon: but as a great many of the Berries will lie in the Ground till the next Spring, ſo the Bed ſhould not be diſturbed, but wait until the Seaſon after, to ſee what will come up: the firſt Winter after the Plants come up, they ſhould be protected from the Froſt, eſpecially in the Autumn; for the firſt early Froſt at that Seaſon is apt to pinch the Shoots of theſe Plants, and do them more Injury than the ſevere Froſt of the Winter; for when the extreme Part of the Shoots is killed, it generally affects the whole Plant.

When the Plants have grown a Year in the Seed-bed, they may be tranſplanted into a Nurſery, where they may ſtand one or two Years to get Strength, and may then be tranſplanted into the Places where they are to remain for good.

There have been ſome of theſe Plants propagated by Layers: but theſe are commonly two, and ſometimes three Years before they put out Roots: and if they are not duly watered in dry Weather, they rarely take Root; ſo that it is uncertain, whether one in three of theſe Layers do ſucceed; which makes theſe Plants very ſcarce in *England*.

The Wood of this Plant is frequently uſed to make Tea, which is eſteemed a great Antiſcorbutic: and in *Carolina* they frequently give a Decoction of the Wood and Leaves in Intermitting Fevers.

The Benjamin-tree is alſo a Native of *North-America*, and ſeldom grows much higher in that Country than the Saſſafras-tree: this has been by ſome Authors thought to be the Tree from whence the Benjamin of the Shops was procured; but that Drug is brought from the *Eaſt-Indies*, and is the Gum of a Tree very different from this.

This Shrub is hardy enough to reſiſt the Cold in *England*; and if it is planted on a moiſt Soil, will grow to the Height of fourteen or ſixteen Feet; and the Leaves will be large and fair; but in dry Ground they make but little Progreſs: this is generally propagated by Layers; for the Plants do not produce Seeds in *England*: the Layers ſhould be laid down in Autumn; and if the Branches are ſlit, as is commonly practiſed in laying of Carnations, they will ſucceed the better: in dry Weather theſe Layers muſt be duly watered, otherwiſe they will not take Root; nor ſhould they be diſturbed until the ſecond Year; for they rarely have ſufficient Roots for tranſplanting ſooner.

It may alſo be propagated by Seeds, which may be procured from *Virginia*, *New-England*, *Carolina*, or any of the Northern Parts of *America*; and ſhould be treated in the ſame manner as hath been directed for the Saſſafras.

The Camphor tree is a Native of the Iſland of *Borneo*; but is alſo found in many Places on the Coaſt of *Malabar*, and upon ſeveral Iſlands in the *South-Sea*: this is too tender to live abroad in *England*, but may be preſerved thro' the Winter in a good Green-houſe; and in the Summer-ſeaſon may be placed in the open Air, in a warm-ſheltered Situation, with other tender Exotic Plants.

This Tree is very near akin to the Cinnamon-tree, from which it differs in the Leaves, thoſe of the Cinnamon-tree having three Ribs running longitudinally from the Footſtalk to the Point, which are remarkably large; whereas the Ribs of the Leaves of this Tree are ſmall, and extend toward the Sides, and have a ſmooth ſhining Surface: they are both Male and Female in different Trees; ſo that there is a Neceſſity for both Sexes to ſtand near each other, in order to have good Seeds.

In *Europe* this Tree is propagated by Layers, which are two Years, and ſometimes longer, before they take Root; ſo that the Plants are very ſcarce; and as all thoſe which I have ſeen flower are Male Trees, ſo there can be no Hopes of procuring Seeds from them here: but if the Berries of this, and alſo of the Cinnamon-tree, were procured from the Places of their Growth, and planted in Tubs of Earth, as hath been directed for the Saſſafras-tree, there may be a Number of theſe Plants procured in *England:* and if they were ſent to the *Britiſh* Colonies in *America*, they might be there cultivated, ſo as to become a public Advantage; eſpecially the Cinnamon-tree, which will grow as well in ſome of our Iſlands in the *Weſt-Indies*, as it doth in the native Places of its Growth; and in a few Years the Trees might be had in Plenty; for they propagate eaſily by the Berries. The *Portugueſe* brought ſome of theſe Trees from the *Eaſt-Indies*, and planted them on the Iſland of *Princes*, on the Coaſt of *Africa*, where they now abound, having ſpread over a great Part of the Iſland.

The Camphor-tree is preſerved in ſeveral curious Gardens, as a rare Plant: the Leaves when bruiſed, and the Wood, ſmell very like the Camphor of the Shops; and the Leaves being of a fine ſhining-green Colour, and continuing all the Year, the Plants make a good Appearance in the Conſervatory during the Winter-ſeaſon; and in Summer, when the Plants are placed abroad, with other tender Exotics, they add to the Variety.

Theſe Plants do not require any artificial Heat in Winter; ſo that if they are placed in a warm dry Greenhouſe, they will thrive very well: during the Winter-ſeaſon they will require to be frequently watered; but they muſt not have too much at each time. In the Summer they ſhould be placed in a warm Situation, where they may be defended from ſtrong Winds, and not too much expoſed to the direct Rays of the Sun; and during this Seaſon they muſt have plenty of Water.

They may be propagated by laying down the young Branches in Autumn, which ſhould be treated in the ſame manner as is before directed for the Saſſafras.

LAURUS ALEXANDRINA. *Vide* Ruſcus.

LAURUSTINUS. *Vide* Tinus.

LAYERS: Many Trees may be propagated by Layers, the Evergreens about *Bartholomew-tide*, and other Trees about the Month of *October*.

This is to be performed by ſlitting the Branches a little Way, and laying them under the Mould about half a Foot: the Ground ſhould firſt be made very light; and after they are laid, they ſhould have a little Water given them.

If they do not comply well in the laying of them down, they muſt be pegged down with an Hook or two; and if they have taken ſufficient Root by the next Winter, they muſt be cut off from the main Plants, and planted in the Nurſery, as is directed about Seedlings.

Some twiſt the Branch, or bare the Rind; and if it be out of the Reach of the Ground, they faſten a Tub or Baſket near the Branch, which they fill with good Mould, and lay the Branch in it.

Laying of Trees.

This Operation is thus performed.

1ſt, Take ſome of the Boughs, and lay them into the Ground about half a Foot deep in fine freſh Mould, leaving them with the End of the Layer about a Foot, or a Foot and an half, out of the Ground, and keep them moiſt during the Summer-ſeaſon, and they will probably have taken, and be fit to remove, in Autumn; and if they have not by that time taken Root, they muſt lie longer.

2dly, Tie a Piece of Wire hard round the Bark of the Bough, at the Place you intend to lay in the Ground; and twiſt the Ends of the Wire, ſo that they may not untie; and prick the Place above the Wire thro' the Bark with an Awl in ſeveral Places; and then lay it in the Ground, as before directed.

3dly, Cut a Slit upwards at a Joint, as is practiſed in laying of Carnations, which by Gardeners is called Tonguing the Layers.

4thly, Twiſt the Place that you deſign to lay in the Ground like a Withy, and lay it into the Ground as directed in the firſt Way of Laying.

5thly, Cut a Place round about the Bough (that is deſign'd to be laid) an Inch or two, at the Place that is moſt convenient to lay into the Ground, and manage it as is directed in the firſt Method of Laying.

The Seaſon for laying hardy Trees, that ſhed their Leaves, is in *October*; but for ſuch as are tender, in *March*; for Ever-greens, *June* or *Auguſt* are good Seaſons.

Tho' Layers may be laid in any time of the Year, the before-mention'd Seaſons are moſt proper, for the Reaſons following; becauſe they have the whole Winter and Summer to prepare and draw Root; for at theſe times of the Year the Sun has ſufficient Power on the Sap of the Tree to feed the Leaf and Bud, but has not Power ſufficient to make a Shoot.

And if that ſmall Quantity of Sap that does ariſe be hinder'd, as it will by ſome of the preceding Ways of Laying, the Leaves and Buds will gently crave of the Layer, and by that means will prepare the Layer to take Root, or put forth Roots a little to maintain itſelf, finding it cannot have Nouriſhment from the Mother-plant.

And therefore, becauſe it wants but little Nouriſhment at that time of the Year, it is better to lay Layers of Trees, or to ſet Cuttings, than at other times, either in the Winter, when the Sap ſtirs but little, or in the Summer, when the Sap abounds, or in the Spring, when it begins to riſe; becauſe it is then apt to come too ſuddenly to draw Sap from the Layer, before the Layer has drawn or prepar'd for Root.

However, the Spring or Summer may do well for ſmall Plants; becauſe ſuch Plants, being but ſhort-liv'd, draw Root the quicker.

If you would lay young Trees from an high Standard, the Boughs of which cannot be bent down to the Ground, then you muſt make uſe of Oſier-baſkets, Boxes, or Pots, fill'd with fine-ſifted Mould, mix'd with a little rotten Willow-duſt. which will keep Moiſture to aſſiſt the Layer in taking Root: the Baſket, Box, &c. muſt be ſet upon a Poſt or Treſſel, &c. and the Bough muſt be laid according to either of the four firſt Ways of Laying; but too much Head muſt not be left on, leſt that be injur'd by the Wind, or by its own Motion rub off the tender Root; and the ſmaller the Boughs are, the leſs Way they ſhould be ſet out of the Ground, and Care muſt be taken to keep them clear from Weeds.

The harder the Wood is, the better will the young Wood take Root; but if the Wood be ſoft, the older Boughs will take Root the beſt.

LEMON-TREE. *Vide* Limon.

LENS, Lentils.

The *Characters* are;

It hath a papilionaceous Flower; the Pointal of which becomes a ſhort Pod, containing orbicular Seeds, which are, for the moſt part, convex: to which may be added, The Leaves are conjugated, growing to one Mid-rib, and terminated by Tendrils.

The *Species* are;

1. Lens *vulgaris.* C. B. P. Common Lentils.

2. Lens *major.* C. B. P. Greater Lentils.

3. Lens *monanthos.* H. L. Lentils with a ſingle Flower.

There are ſeveral Varieties of the firſt and ſecond Sorts, which differ from each other in Colour of their Flowers and Fruits; but theſe are accidental, and will often riſe from the ſame Seeds; for which Reaſon they are not worth obſerving in this Place.

Theſe Plants are very common in the warm Parts of *Europe*, and in the *Archipelago*, where they are the Food of the poorer Sort of People, which they loath when they meet with better Fare; from whence came the Proverb, *Dives factus jam deſiit gaudere Lente:* which is apply'd to ſuch as ſpurn at thoſe Things in eaſy Circumſtances, which they were glad of in a low Condition.

Theſe Plants are one of the leaſt of the Pulſe-kind, and call'd in ſome Places Tills: they may be propagated in the ſame manner as Vetches, &c. but muſt be ſown a great deal thinner. They will grow upon a dry barren Soil beſt, and are a very good Fodder for Cattle; but as they require an annual Culture, they are not at preſent very much eſteem'd. Their Seeds are very good for Pigeons.

LENTISCUS, The Maſtich-tree.

The *Characters* are;

The Leaves are pinnated, the Lobes growing oppoſite, and are faſtened to one common Mid-rib: the Male Flowers, which are produced upon ſeparate Trees from the Fruit, have ſhort green quadrifid Cups, which expand in form of Stars, having four or five ſhort Stamina, *with large red* Apices: *theſe Flowers are collected into a Bunch: the Ovary, in the Female Plants, which grows upon the Top of a long thick Footſtalk, is commonly branch'd, and becomes a Fruit, which contains a Nut with an hard Shell.*

The *Species* are;

1. Lentiscus *vulgaris.* C. B. P. Common Maſtich-tree.

2. Lentiscus *vulgaris, foliis minoribus & pallidioribus.* H. L. The Male Maſtich-tree, with leſſer and paler Leaves.

Theſe two Plants are promiſcuouſly preſerv'd in many curious Gardens in *England*, where they are commonly kept in Pots and Tubs, and houſed in the Winter, with Oranges, Myrtles, &c. but in ſome Places, which are well defended from cold Winds, I have obſerved them growing in the open Air, without ſuffering the leaſt Injury from our ordinary Winters; but in extreme hard Weather they are ſometimes greatly damaged; however, as they are ſeldom quite deſtroy'd, eſpecially if the Plants are ſtrong, and have taken good Root in the Ground, it is worth our Care to endeavour to naturalize them to our Climate; which may eaſily be effected, provided you keep them in Pots until they have acquired a ſufficient Strength; and then ſhake them out in the Spring of the Year, preſerving as much of the Earth to their Roots as you can, planting them on a dry warm Soil, and in a well-ſhelter'd Situation; and in Winter lay ſome Mulch upon the Surface of the Ground about their Roots, to prevent the Froſt from penetrating to them; as alſo in very ſevere Froſts you ſhould cover their Stems and Heads with ſome Straw, or Peas-haulm, which will prevent their being deſtroy'd; and after they have been inured to the open Air for two or three Years, they will then be moſtly out of Danger, and will grow much better than thoſe Plants which are kept in Pots or Tubs.

Theſe Plants are propagated by laying down their young Branches in the Spring, which ſhould be ſlit at a Joint (as is practis'd in laying Carnations); and in dry Weather they muſt be frequently water'd, to encourage their ſtriking Root, which they rarely do until the ſecond Year, before which they ſhould not be diſturb'd; but then, if they have taken ſufficient Root, they ſhould be tranſplanted in *April*, placing them, as was before directed, in a warm Situation; obſerving to water them in dry Weather, as alſo to lay ſome Mulch about their Roots, to prevent the Ground from drying too faſt; and in Winter lay a little freſh Mulch about them, to keep out the Froſt; after two or three Years, they will be ſufficiently hardy, and will require no farther Care, but to dig the Ground about them every Spring, and keep them clean from Weeds, as alſo to trim up the lateral Branches, to make them aſpire in Height; but by no means ſhould you ſhear them into Balls and Pyramids (as the common Practice); but let them grow in their utmoſt Luxuriancy, in which manner they will appear much more beautiful than in thoſe ſtudied Figures.

Theſe Plants may be propagated from the Berries, which may be obtain'd from the Southern Parts of *France* or *Spain*, where they grow in great Plenty; they muſt be ſown in Pots or Tubs of freſh light Earth, and hous'd in Winter (for the Plants ſeldom come up until the ſecond Year); but in Summer they ſhould be expos'd in a warm Situation, and often refreſhed with Water: when the Plants come up, they muſt be carefully clear'd from Weeds, and refreſh'd with Water in dry Weather; and in Winter the Pots or Tubs muſt be remov'd into Shelter, but ſhould have a great Share of free Air in mild Weather; and the Spring following, the Plants ſhould be taken up, and each of them planted into a ſeparate Pot; then plunge the Pots into a moderate Hot-bed, to facilitate their taking Root; after which they may be expos'd to the open Air (as was directed for the older Plants), and continue to houſe them every Winter, until they are three or four Years old; after which they may be planted into the open Air, when they muſt be treated as the old Plants.

Theſe Trees are always green, which renders them more valuable; and their Leaves being of a beautiful Figure, and their Heads generally growing very regular, renders them worthy of a good Situation: they ſeldom riſe above twelve or fourteen Feet high with us, and ſhould therefore be intermixed with other Ever-greens of the ſame Growth: but as theſe Trees are ſometimes injured by ſevere Froſt, ſo it is proper to keep ſome Plants in Tubs, which may be ſheltered in Winter in the Green-houſe, in order to preſerve their Species.

LEONTOPETALON, Lion-leaf.

The *Characters* are;

It hath a thick tuberoſe perennial Root: the Flower is naked, and conſiſts of five or ſix Petals, which expand in form of a Roſe, attended by Stamina: *in the Middle of the Flower riſes the Pointal, which afterward becomes a Bladder, containing many ſpherical Seeds.*

We have but one *Species* of this Plant in the *Engliſh* Gardens; which is,

Leontopetalon *foliis coſtæ ramoſæ innaſcentibus. Flor.* Lion-leaf with Leaves growing on a branched Rib.

This Plant is found in great Plenty in the Iſlands of the *Archipelago*, but in the greateſt Plenty about *Aleppo*, and alſo in ſome Parts of *Italy*; but at preſent is very rare in *England*: it may be propagated by ſowing the Seeds, or parting the Roots; but the former is the beſt Method, if the Seeds could be obtained from abroad; for they ſeldom produce good Seeds in *England*, nor do they increaſe very faſt by their Roots.

The Seed of this Plant ſhould be ſown ſoon after it is ripe, in Pots or Tubs fill'd with freſh light Earth, that the Plants may be removed into Shelter in the Winter; for if they are expoſed at that Seaſon (which is the time they ariſe), the Cold will deſtroy them; but in the Summer they ſhould be ſet abroad, where they may have the morning Sun until Ten of the Clock; and when the Plants are ſtrong enough to be tranſplanted, they ſhould be each of them put into a ſeparate Pot, and in Winter placed into an Hot-bed-frame, where they may be ſhelter'd in ſevere Froſts; but in mild Weather they ſhould be expos'd to the open Air.

When the Plants are two Years old, they may be taken out of the Pots, and planted into a warm Border under a South Wall, where they will endure the Cold of our ordinary Winters very well, being ſeldom hurt but by ſevere Froſts, or too much Wet; for which Reaſon they ſhould always be planted in a dry Soil.

The beſt Seaſon for tranſplanting theſe Roots is in *June*, when their Leaves are decay'd; for if you defer it till *July* or *Auguſt*, they will be ſtriking out new Roots, when they will not be ſo ſafely remov'd. They produce their Flowers in Winter, for which they are chiefly valued.

LEONTOPODIUM. *Vide* Plantago.

LEONURUS, Lion's-tail.

The *Characters* are;

It is one of the verticillate Plants with a Lip-flower, which conſiſts of one Leaf, whoſe Galea *or Creſt is imbricated, and much longer than the under Lip, which is divided into three Segments: out of the Flower-cup riſes the Pointal, fix'd like a Nail to the hinder Part of the Flower, ſurrounded by four Embryoes, which afterward turn to ſo many Seeds, which are ob-*

long, and incloſed in a long fiſtulous Huſk, which before was the Flower-cup.

The *Species* are;

1. LEONURUS *perennis, ſideritidis folio, flore phœniceo majore. Breyn. Prod.* Perennial *African* Lion's-tail, with an Ironwort-leaf, and a large ſcarlet Flower.

2. LEONURUS *perennis Africanus, ſideritidis folio variegato, flore phœniceo majore.* Perennial *African* Lion's-tail, with a variegated Ironwort-leaf, and a large ſcarlet Flower.

3. LEONURUS *minor, Capitis Bonæ Spei, vulgo. Boerh. Ind.* Leſſer Lion's-tail from the *Cape of Good Hope,* with a Cat-mint-lef.

Theſe Plants are very great Ornaments in a Green-houſe, producing large Tufts of beautiful ſcarlet Flowers in the Months of *October* and *November*, when few other Plants are in Perfection; for which Reaſon a good Green-houſe ſhould never be wanting of theſe Plants, eſpecially ſince they require no artificial Heat, but only to be preſerved from hard Froſts; ſo that they may be placed amongſt Oranges, Myrtles, Oleanders, *&c.* in ſuch a manner, as not to be too much overſhaded with other Plants; but that they may enjoy as much free Air as poſſible in mild Weather.

They are eaſily propagated by planting Cuttings of any of the Sorts in Pots filled with light Earth, any time in *July* or *Auguſt*, obſerving to ſhade and water them until they have taken Root; after which they muſt be each of them planted into a ſeparate Pot fill'd with light rich Earth, and often refreſh'd with Water (for it is an aquatic Plant in its native Country); and in *October* they muſt be removed into the Green-houſe; but in *May* they ſhould be expos'd again to the open Air, placing them where they may have the morning Sun till Eleven of the Clock, obſerving never to let them want Water, which will encourage them to produce ſtrong Tufts of Flowers in Autumn.

Theſe Plants will grow to be eight or nine Feet high, and abide many Years; but are very ſubject to grow irregular; therefore their Branches ſhould be pruned early in the Spring, in order to reduce them to a tolerable Figure; but they will not bear to be often pruned or ſhear'd, nor can they ever be form'd into Balls or Pyramids; for if they are often ſhorten'd, it will prevent their flowering.

The ſtrip'd Sort is, by many People, valued for the Variety of its Leaves; but as that is occaſion'd by a Weakneſs in the Plant, the Flowers of that Sort are never ſo large and fair, as are thoſe of the plain Sort, nor produced in ſo great Bunches..

The third Sort is alſo preſerv'd for Variety more than its Beauty; the Flowers of this being much ſmaller, and not ſo well colour'd, as are thoſe of the common Sort. This Plant ſeldom grows above three Feet high.

LEPIDIUM, Dittander or Pepperwort.

The *Characters* are;

The Flower conſiſts of four Leaves, which are placed in form of a Croſs, from whoſe Cup ariſes the Pointal, which afterward becomes a ſpear-ſhaped Fruit, which is divided in the Middle by a Partition into two Cells, which contain many oblong Seeds.

The *Species* are;

1. LEPIDIUM *latifolium. C. B. P.* Common broad-leav'd Dittander, or Poor-man's Pepper.

2. LEPIDIUM *humile incanum arvenſe. Inſt. R. H.* Low hoary Dittander, or Pepperwort.

3. LEPIDIUM *gramineo folio, ſive Iberis. Inſt. R. H.* Graſs-leav'd Dittander, or Sciatica Creſs.

4. LEPIDIUM *humile minus incanum Alepicum. Inſt. R. H.* Low greener Dittander of *Aleppo*.

5. LEPIDIUM *capillaceo folio, fruticoſum Hiſpanicum. Inſt. R. H.* Shrubby *Spaniſh* Dittander, with very narrow Leaves.

6. LEPIDIUM *Orientale, naſturtii criſpi folio. Tourn. Cor. Eaſtern* Dittander, with a curled Creſs-leaf.

7. LEPIDIUM *Orientale, naſturtii folio, caule veſicario. Tourn. Cor. Eaſtern* Dittander, with a Creſs-leaf, and a ſwelling Stalk.

8. LEPIDIUM *Orientale, caryophylli folio. Tourn. Cor. Eaſtern* Dittander, with a Clove-gilliflower-leaf.

The firſt and third Sorts are directed by the College of Phyſicians to be uſed in Medicine. The firſt grows wild in ſome Parts of *England*; but is generally cultivated in Gardens for Uſe. The Herb and Root of this Sort were formerly uſed in Sawce, to give a warm biteing Taſte thereto; and ſome poor People have mixed a few of the Leaves in their Sallads, for the ſame Purpoſe. This Sort is eaſily propagated by planting any ſmall Pieces of the Root, either in Spring or Autumn, after the manner directed for Horſe-radiſh; but it ſhould be placed in ſome odd Corner of the Garden, and not near other Plants, becauſe the Roots will ſpread, and ſhoot up at a great Diſtance, ſo as to over-run the Ground where it is planted.

The third Sort may be propagated by Seeds, which ſhould be ſown in the Spring; and when the Plants are come up, they ſhould be thinned, ſo as to leave them eight or ten Inches aſunder, and keep them clear from Weeds; which is all the Culture they require. The ſecond Year the Plants will produce Seeds, and the old Roots will remain ſeveral Years, provided they are not in too rich Ground. The Leaves and Seeds of this Plant are uſed in Medicine.

The ſecond and fourth Sorts are trailing Plants, which propagate very faſt by their creeping Roots: theſe are preſerved in Botanic Gardens for Variety; but there is little Beauty in them.

The fifth Sort was diſcovered by Dr. *Tournefort* in *Spain*. This grows ſhrubby, and will abide the Cold of our ordinary Winters in the open Air, provided it is planted on a poor dry Soil. It may be propagated either by Seeds or Cuttings.

The other three Sorts were diſcovered by Dr. *Tournefort* in the *Levant*, from whence he ſent their Seeds to the Royal Garden at *Paris*. Theſe are alſo preſerved in Botanic Gardens for the ſake of Variety, and may be eaſily propagated by Seeds.

LEPIDOCARPODENDRON. *Vide* Protea.

LETTUCE. *Vide* Lactuca.

LEUCANTHEMUM, Ox-eye Daiſy.

The *Characters* are;

It agrees in every reſpect with the Chryſanthemum, except in the Colour of its Semi-florets, which in theſe are conſtantly white.

The *Species* are;

1. LEUCANTHEMUM *vulgare. Tourn.* Common Ox-eye Daiſy.

2. LEUCANTHEMUM *Alpinum majus, rigido folio. Tourn.* Greater Ox-eye Daiſy of the *Alps*, with ſtiff Leaves.

3. LEUCANTHEMUM *radice repente, foliis latioribus ſerratis. Tourn.* Creeping-rooted Ox-eye Daiſy, with broad ſerrated Leaves.

4. LEUCANTHEMUM *folio abſinthii, Alpinum. Ciaſſi. Alpine* Ox-eye Daiſy, with a Wormwood leaf.

5. LEUCANTHEMUM *tanaceti folio, flore majore. Boerh. Ind.* Ox-eye Daiſy, with a Tanſy-leaf, and a large Flower.

6. LEUCANTHEMUM *Canarienſe, foliis chryſanthemi, ſapore pyrethri. Tourn. Canary* Ox-eye Daiſy, with a Chryſanthemum-leaf, and a Taſte like Pellitory of *Spain*, vulgarly call'd Pellitory of *Spain*.

7. LEUCANTHEMUM *montanum, foliis chryſanthemi. Inſt. R. H.* Mountain Ox-eye Daiſy, with Corn-marigold-leaves.

8. LEUCANTHEMUM *gramineo folio. Inſt. R. H.* Graſs-leav'd Ox-eye Daiſy.

9. LEUCANTHEMUM *latiſſimo folio, flore maximo. Inſt. R. H.* Broadeſt-leav'd Ox-eye Daiſy, with a large Flower.

10. LEUCANTHEMUM *Luſitanicum, argenteo laciniato folio. Inſt. R. H. Portugal* Ox-eye Daiſy, with a ſilver jagged Leaf.

11. LEUCANTHEMUM *Americanum fruteſcens, foliis latis conjugatis & aſperis, flore albo, capitulis ſquamoſis. Houſt.* Shrubby *American* Ox-eye Daiſy, with broad rough Leaves growing oppoſite, a white Flower, and a ſcaly Cup.

The firſt of theſe Plants is very common in the Meadows in moſt Parts of *England*, from whence the Flowers are gathered, and brought into the Markets in *London* for medicinal Uſes; but it is ſeldom cultivated in Gardens.

The ſecond and fifth Sorts are many times planted in Gardens, for their Beauty: theſe produce large Tufts of white radiated Flowers upon the Summits of their Stalks, which continue a long time in Beauty: they commonly grow two Feet high or more; for which Reaſon they ſhould always be placed in the Middle of large Borders, and require to be planted at a good Diſtance from other Plants, otherwiſe they will overbear them: ſo that they are not very proper for ſmall Gardens, taking up too much room.

Theſe are very hardy Plants, and may be propagated either by ſowing their Seeds, or parting their Roots: the beſt time for ſowing their Seeds is in *March*, upon a Border of freſh light Earth; and when the Plants are come up pretty ſtrong, they muſt be tranſplanted into freſh Borders of the like Earth, placing them at eight Inches Diſtance each Way: in theſe Borders they may remain till *Michaelmas*, when they ſhould be removed into the Borders where they are to continue, and the Summer following they will produce Flowers and Seeds.

But if you would propagate them by parting their Roots, the beſt Seaſon for this Work is in *September* or *October*; for if it be done in the Spring, they ſeldom flower ſo ſtrong the ſucceeding Summer.

The third Sort multiplies too faſt by its creeping Roots, which will ſpread, and come up at a great Diſtance from the old Plant, ſo that it is hardly to be kept within tolerable Bounds; but it is very apt to run over whatever Plants ſtand near; for which Reaſon it ſhould never be placed amongſt choice Flowers, but allowed a Place in ſome abject Part of the Garden, in a Corner allotted to it; where it will grow to the Height of four Feet, and produce large radiated white Flowers in *September* and *October*.

The fourth Sort is ſeldom admitted into curious Flower-gardens, it being a rambling Plant; and the Branches trailing upon the Ground, render it unſightly, nor are the Flowers very beautiful; ſo that it is ſeldom preſerv'd but in Botanic Gardens.

The other Sorts are all very hardy Plants, and will grow in almoſt any Soil or Situation; and there being very little Trouble in their Culture, they deſerve room in all large Gardens.

The ſixth Sort was brought from the *Canary* Iſlands; ſo is tenderer than any of the former, and muſt be preſerved in Pots, and ſheltered in the Winter. This is propagated by planting Cuttings, in any of the Summer-months, in a North Border of light Earth; where they will ſoon take Root, after which they muſt be planted into Pots filled with freſh light Earth, and expoſed to the open Air until the Middle or Latter-end of *October*, when they muſt be houſed; but ſhould be placed in the cooleſt Part of the Houſe, where they may have much free Air in mild Weather, and muſt be frequently refreſh'd with Water; but in Summer-time they may be expoſed to the open Air, in a ſhady Situation, where they will thrive much better than if expoſed to the Sun; which would dry the Earth too faſt, ſo that they would conſtantly require to be water'd.

This Plant is not apt to continue above three or four Years without renewing; therefore Cuttings ſhould be planted every other Year, to maintain the Kind, where People are curious to preſerve their Varieties. The great Beauty of this Plant conſiſts in its long Continuance in Flower; for when the Plants are properly managed, they will produce Flowers throughout the Year; and although their Flowers are not very beautiful, yet in the Winter-ſeaſon, when there is want of better Sorts, this Plant will add to the Variety in the Green-houſe; therefore may be allowed a Place in all ſuch Gardens where Collections of Plants are preſerved, In Botanic Gardens it is preſerved for the ſake of Variety; and ſome have ſuppoſed it to be the true Pellitory of *Spain*, which, in reality, is a different Plant; tho' this has a very ſharp acrid Taſte, much like that of the Pellitory.

The four next-mentioned Sorts are very hardy Plants; ſo may be treated in the ſame manner as hath been directed for the five Sorts firſt-mentioned.

The laſt Sort was diſcovered by Dr. *William Houſtoun*, at *Campechy*, from whence he ſent the Seeds to *England*. This is a ſhrubby Plant, which grows eight or nine Feet high, having many Stems, and irregular Branches; but it hath not produced any Flowers in *England*. This Plant may be propagated by Cuttings, during any of the Summer-months, if they are planted in a Bed of light Earth, and ſhaded from the Sun. In the Winter this muſt be placed in a moderate Stove; and in Summer it may be placed abroad, in a warm Situation.

LEUCOIUM, Stock-gilliflower.

The *Characters* are;

The Flower is compoſed, for the moſt part, of four Leaves, which are placed in form of a Croſs: out of the Flower-cup riſes the Pointal, which becomes a long flat Pod, divided into two Cells by an intermediate Partition, to which the Valves adhere on both Sides, and are furniſhed with flat ſmooth Seeds, which are orbicular, and bordered round their Edges: to which

which may be added, The Flowers are ſpecious, and ſweet-ſmelling.

The *Species* are;

1. Leucoium *incanum majus. C. B. P.* Greater hoary Stock-gilliflower, with ſingle white Flowers.

2. Leucoium *incanum majus, flore cinericeo. C. B. P.* The great hoary Stock-gilliflower, with an aſh-colour'd Flower.

3. Leucoium *purpureum, vel rubrum. C. B. P.* Purple or red Stock-gilliflower.

4. Leucoium *incanum majus coccineum. Mor. Hiſt.* The greater hoary crimſon Stock-gilliflower, vulgarly call'd The *Brumpton* Stock.

5. Leucoium *violaceum. Tabern.* Violet-colour'd Stock-gilliflower.

6. Leucoium *incanum majus multiplex, flore purpureo. C. B. P.* Greater hoary Stock-gilliflower, with a double purple Flower.

7. Leucoium *incanum majus multiplex, flore rubro. C. B. P* Greater hoary Stock-gilliflower, with a double red Flower.

8. Leucoium *incanum majus multiplex, flore albo. Tourn.* Greater hoary Stock-gilliflower, with a double white Flower.

9. Leucoium *incanum majus variegatum, pleno flore. C. B. P.* The greater hoary Stock-gilliflower, with a double variegated Flower.

10. Leucoium *majus incanum variegatum album, flore ſimplici, maculis ex albo rubris. C. B. P.* The greater hoary Stock-gilliflower, with a ſingle white Flower, ſpotted and ſtrip'd with red.

11. Leucoium *pleno flore, album, ſanguineis maculis ſignatum. Hort. Eyſt.* White Stock-gilliflower, with a double Flower mark'd with bloody Spots.

12. Leucoium *pleno flore, album, purpureis maculis ſignatum. Hort. Eyſt.* White Stock-gilliflower, with a double Flower mark'd with purple Spots.

13. Leucoium *incanum majus variegatum, pleno flore, foliis in ambitu argenteis. H. L.* The greater hoary variegated Stock-gilliflower, with a double Flower, and Leaves edg'd with Silver.

14. Leucoium *minus & annuum. Dod.* Leſſer annual Stock gilliflower.

15. Leucoium *album odoratiſſimum, folio viridi. C. B. P.* The moſt ſweet-ſmelling Stock-gilliflower, with a green Leaf, commonly call'd The white Wall-flower.

16. Leucoium *album odoratiſſimum folio viridi, pleno flore.* The double white Wall-flower, *vulgo.*

17. Leucoium *luteum vulgare. C. B. P.* The yellow Wall flower.

18. Leucoium *luteum, flore pleno, minus. C. B. P.* The common double Wall-flower.

19. Leucoium *anguſtifolium Alpinum, flore ſulphureo. H. R. Par.* Narrow-leav'd *Alpine* Wall-flower, with a brimſtone-colour'd Flower.

20. Leucoium *anguſtifolium Alpinum, flore pleno ſulphureo.* Narrow-leav'd *Alpine* Wall-flower, with a double brimſtone-colour'd Flower, commonly call'd The ſtraw-colour'd Wall flower.

21. Leucoium *luteum, magno flore. C. B. P.* Wall-flower with a large Flower.

22. Leucoium *luteum, flore pleno, majus. C. B. P.* The greater Wall-flower, with a double Flower.

23. Leucoium *majus, flore intus luteo, extus ferrugineo.* Greater Wall-flower, with larger Flowers, yellow within, and on the Outſide of an Iron-colour, commonly call'd The *Ravenal* Wall-flower.

24. Leucoium *majus, flore majore pleno, intus luteo, extus ferrugineo.* The double *Ravenal, vulgo.*

25. **Leucoium** *majus, flore pleno ferrugineo. Tourn.* The old double bloody Wall-flower.

26. **Leucoium** *luteum, pleno flore, foliis ex luteo variegatis.* The yellow variegated Wall-flower, with a double Flower.

27. **Leucoium** *luteum, pleno flore, foliis ex albo eleganter variegatis.* The ſilver-ſtrip'd Wall-flower, with a double Flower.

There are ſeveral other Varieties of theſe Flowers, which are preſerv'd in ſome curious Botanic Gardens; but thoſe here mention'd are the moſt beautiful, and beſt worth propagating in all curious Flower-gardens.

All the Sorts of Stock-gilliflowers are propagated by Seeds: the beſt time for ſowing them is in the Beginning of *April*, upon a Border of freſh light Earth, where they may be expos'd to the morning Sun; for if they are too much expos'd to the Sun in the Heat of the Day, they are very ſubject to be eaten by a ſort of Fly; as they often are while young, upon an hot dry Soil. To remedy which, you ſhould always ſow a few Radiſhes amongſt them, which will ſecure them from this Miſchief: for the Flies will always prey upon the Radiſhes, whereby your Gilliflower-plants will be preſerved; but then you muſt not ſuffer the Radiſhes to be too thick amongſt them; for that would draw them up very weak, and cauſe them to be long-ſhank'd. When your Plants have gotten ſix Leaves, they muſt be tranſplanted into other Borders of the like freſh Earth, and expos'd to the morning Sun at about ſix Inches Diſtance; obſerving to water and ſhade them until they have taken Root; after which they will require no farther Care, than only to keep them clear from Weeds, until the Latter-end of *Auguſt*, or the Beginning of *September*, when you muſt tranſplant them into the Borders of the Pleaſure-garden; which ſhould be done, if poſſible, in moiſt Weather, that they may the ſooner ſtrike Root, whereby they will be ſecurely faſten'd in the Ground before the Froſt comes on; which would prevent their taking Root, and thereby either quite deſtroy them, or at leaſt cauſe them to flower very weak the ſucceeding Spring.

There are many People who make a great Stir about ſowing theſe Seeds, and tranſplanting the Plants always at the ſame time when the Moon is at the Full, in order to obtain a greater Number of double Flowers; but from ſeveral Years Obſervation, I could never find any thing in this Management, nor from the frequently removing the Plants, as is by ſome directed; which only weakens them, and cauſes them to produce ſmaller Bunches of Flowers; but I never could obtain any more double Flowers by this Management, than if they had never been remov'd: but the beſt Method that I have obſerv'd, to have theſe Flowers in the greateſt Perfection, is, to change the Seeds every Year, if you can procure a good Correſpondent at ſome Place at a great Diſtance from you, who will faithfully furniſh you with good Seeds: and in ſaving theſe Seeds, if you obſerve a greater Number of Petals than uſual in the ſingle Flowers, it is a good Sign, that the Seeds of ſuch Plants will produce double Flowers. I have alſo obſerv'd, that if the Seeds are preſerved in the Pods a Year before they are ſown, a greater Number of Plants with double Flowers has been produced, than from the ſame Seeds ſown the firſt Year.

As theſe Plants are commonly biennial, and ſeldom continue longer than the ſecond Year, hence there will be a Neceſſity of ſowing Seeds every Year; for when they have flowered and ſeeded, they commonly decay ſoon after; as alſo do the double Flowers ſoon after they are out of Flower; or if ſome of them ſhould continue another Year, they are ſeldom ſo ſtrong, or produce ſuch fair Flowers, as the young ſeedling Plants: ſo that, upon the Whole, they are ſcarcely worth ſtanding. And tho' ſome People recommend the propagating the double Sorts from Slips and Cuttings, as the ſureſt Way to have double Flowers, which indeed is very true; yet the Plants thus rais'd are always weaker than thoſe rais'd from Seeds, and never produce their Flowers near ſo large or fair: wherefore (as I ſaid before) it is better to have a Succeſſion of ſeedling Plants every Year, amongſt which you will always have a Quantity of double Flowers, provided your Seed be good.

The *Brumpton* Stock-gilliflower is by many People moſt valued for the Largeneſs of its Flowers, and the Brightneſs of their Colour: but this Sort ſeldom produces more than one Spike of Flowers upon a Plant; whereas the *Italian* and purple Sorts produce ſeveral very fair Bunches upon each Plant, eſpecially if they have Strength: and there is a Sort commonly call'd the Stock-major (which, probably, is the ſeventh Sort here mention'd), which branches out on every Side, and produces many fair Spikes of Flowers from one Root; theſe are of a beautiful red Colour: as doth another Sort, commonly (though falſly) call'd the Annual-ſtock, which will produce its Flowers the firſt Year from Seed; but then the Plants commonly continue the next Seaſon, and flower again very ſtrong; and theſe often produce ſome Variety in the Colour of their Flowers; ſome being of a beautiful ſcarlet, others of a pale-red Colour, and ſome of them are finely variegated; and theſe all produc'd from Seeds taken from the ſame Plant: but this Sort is very apt to degenerate, if the Seeds are not frequently changed.

The ſmall annual Stock-gilliflower will produce Flowers in about ten Weeks after ſowing (which has occaſion'd its being call'd the ten Weeks Stock); and if the Seaſon be tolerably cool and moiſt, theſe Flowers will be very large: and often there are large double Flowers produc'd among them, which renders them well worth propagating, eſpecially if you ſow them in *May*, which will cauſe them to flower in *Auguſt* and *September*, when Flowers are beginning to be ſcarce in the Gardens. Theſe Plants produce ripe Seeds the ſame Year, and rarely ſurvive a Winter.

Theſe Plants ſhould all be planted in a freſh light Soil, which muſt not be dung'd; for they don't ſucceed upon a rich Soil, in which they are apt to grow very rank, and then their Roots canker and decay; ſo that they ſeldom abide the Winter in ſuch Soils; but in a freſh Soil they will ſtand our ordinary Winters extremely well, and will produce large fair Flowers.

The common ſingle Wall-flower is very ſeldom cultivated in Gardens, but is often found growing upon old Walls and Buildings in divers Parts of *England*: this is the Sort which is directed in the College Diſpenſatory for medicinal Uſes: but the double of this Kind is very common in moſt of the *Engliſh*

Gardens; which is propagated by planting Slips or Cuttings in any of the Spring-months, obſerving to water and ſhade them until they have taken Root; after which they may be remov'd to the Places where they are to remain.

The ſtraw-colour'd Wall-flower with double Flowers was formerly more common in the *Engliſh* Gardens than at preſent: this is a much finer Sort for Shew than the common, the Plants generally growing more upright; and the Spikes of Flowers are much larger, and grow much cloſer together, than thoſe: but the Flowers have very little Scent; which, I ſuppoſe, has occaſion'd its being leſs cultivated than it was formerly; though indeed, for Shew, it is inferior to none of the Sorts of Wall-flowers: this is alſo propagated by Slips, as the common Sort.

The white Wall-flower is propagated by ſowing the Seeds in *April*, in the manner before directed for the Stock-gilliflowers; and if the Seeds are good, there will be many double Flowers produc'd amongſt them; which may be continu'd, by planting the Slips in the ſame manner as has been directed for the common Wall-flower. But the double of this Kind, being ſomewhat tenderer than the other Sorts of Wall-flowers, ſhould be planted into Pots fill'd with freſh light Earth; and in the Winter-ſeaſon ſhould be plac'd under an Hot-bed frame, where they may be ſhelter'd from ſevere Froſts; but in mild Weather they ſhould have as much free open Air as poſſible; in which Management they will endure two or three Years, and produce fair Flowers.

The large-flowering Wall-flower is alſo propagated by Seeds in the ſame manner as the Stock-gilliflowers; for though it will grow from Slips, yet theſe ſeldom make ſo good Plants as thoſe produc'd from Seeds, nor will they flower ſo ſtrong. This Sort rarely produces many double Flowers; but yet is well worth propagating, for the Largeneſs and Sweetneſs of its Flowers; and if they are planted in a very poor dry Soil, will continue two or three Years, and endure the Cold extremely well.

The *Ravenal* Wall-flower is at preſent in the greateſt Eſteem with the curious Floriſts, the Flowers of this Kind being full as large as the laſt-mention'd Sort, and are of a fine rediſh or iron Colour on the Outſide, as alſo of an extraordinary Sweetneſs; and this is more apt to produce double Flowers than the former: it is propagated by Seeds, which ſhould be ſown in *March*, and manag'd as was directed for the Stock-gilliflower; obſerving never to plant them in a rich Soil, which will cauſe them to grow very faſt during the Summer-ſeaſon; but they ſeldom endure the Winter in ſuch Soils. The double-flower'd Plants of this Kind may alſo be propagated by Slips, in the ſame manner as the before-mention'd Sorts; but theſe ſhould be ſhelter'd in Winter, as was directed for the white Wall-flower, otherwiſe they are ſubject to be kill'd by very ſharp Froſts. The Seeds of this Kind ſhould be often chang'd, or elſe they will greatly degenerate.

The old double-bloody Wall-flower was formerly more common in *England* than at preſent, it being at this time rarely to be ſeen: this is a Variety of the common double Wall-flower, from which it only differs in having the Outſide of the Petals of a bloody Colour: it may be propagated by Slips, as the common

mon Sort; but requires to be ſhelter'd from extreme Cold in the Winter; which often deſtroys theſe Plants, if they are too much expos'd to it.

The yellow-ſtrip'd Wall-flower is alſo a Variety of the common double Sort, having its Leaves beautifully variegated in the Spring and Winter-ſeaſon; but in the Summer, when the Plants are very free of Growth, they degenerate to be almoſt quite plain; ſo that at that Seaſon there is very little Beauty in them. This is alſo propagated by Slips, as the common Sort; but ſhould be planted in a warm Situation, otherwiſe it will often ſuffer by great Colds in Winter.

The ſilver-ſtrip'd Wall-flower is much more beautiful than the laſt, and generally retains its curious Variegation through the whole Year. This is propagated by Slips, as the former; but ſhould be ſhelter'd in Winter, being much tenderer than the laſt: for which Reaſon, the Plants ſhould be ſet into Pots, and treated as the double white Wall-flower: but you ſhould obſerve, never to plant them in a rich Soil; which will cauſe them to become plain (as I have often obſerv'd): nor ſhould they have too much Moiſture, which very often deſtroys them.

All the Sorts of Wall-flowers will abide the Cold much better, if planted in a very gravelly and ſtony Soil, than when they are in a rich Earth; as may be obſerv'd by thoſe which grow upon the Tops of Walls, and other Buildings; where ſometimes they are very much expos'd to the cold Winds, and yet often endure the ſharpeſt Winters; when thoſe which were planted in a good Soil have been deſtroy'd, tho' they have had a warm Situation.

LICHEN, Liverwort.

There being two Sorts of this Plant, which are uſed in Medicine, and one of thoſe being accounted a ſovereign Remedy for the Bite of mad Dogs, I thought it would not be improper to mention them here, tho' they are Plants which cannot be propagated by any Method, except by paring up the Turf of Graſs whereon they grow, and laying it down in ſome moiſt ſhady Place; where, if the Turf takes Root, and thrives, theſe Plants will ſpread, and do well.

The two *Sorts* are;

1. LICHEN *petræus latifolius, ſive Hepatica fontana. C. B. P.* Common broad-leav'd Liverwort.

2. LICHEN *terreſtris cinereus, Raii Syn.* Aſh-colour'd Ground-liverwort.

The firſt Sort grows on the Sides of Wells, and in moiſt ſhady Places not only on the Ground, but on Stones, Bricks, or Wood. Of this there are ſeveral Varieties, which are diſtinguiſhed by the Curious in Botany: but as they are Plants of no Uſe, I ſhall not enumerate them.

The ſecond Sort (which is uſed to cure the Bite of mad Dogs) grows on Commons, and open Heaths, where the Graſs is ſhort, in moſt Parts of *England*, eſpecially on Declivities, and on the Sides of Pits. This ſpreads on the Surface of the Ground; and, when in Perfection, is of an Aſh-colour; but as it grows old, it alters, and becomes of a dark Colour. This is often carried into Gardens with the Turf, which is laid for Walks and Slopes; and where the Soil is moiſt and cool, it will ſpread, and be difficult to deſtroy, ſo that it renders the Graſs unſightly: but this is the only Method yet known to have it grow in Gardens, where it is deſired.

This is eſteemed a ſovereign Remedy for the Bite of mad Dogs, and hath been for many Years uſed with great Succeſs. It was communicated to the *Royal Society* by Mr. *George Dampier*, whoſe Uncle had long uſed this Plant, to cure the Bite of mad Dogs on Men and Animals, with infallible Succeſs. The Method of taking it he has delivered as followeth: "Take of the Herb, and dry it "either in an Oven, by the Fire, or "in the Sun; then powder it, and "paſs it thro' a fine Sieve; mix "this with an equal Quantity of "fine-powdered Pepper. The common Doſe of this Mixture is four "Scruples, which may be taken in "warm Milk, Beer, Ale, or Broth." He alſo adviſes, that the Part bitten be well waſhed, as alſo the Cloaths of the Perſon who is bit, leſt any of the Snivel or Drivel of the mad Dog ſhould remain. If the Perſon bitten be full-grown, he adviſes, that he be blooded before the Medicine is taken; and to uſe the Remedy as ſoon after the Bite as poſſible, as alſo to repeat the Doſe two or three ſeveral Mornings faſting.

LIGUSTICUM, Lovage.

The *Characters* are;

The Lobes of the Leaves are cut about their Borders, like thoſe of Parſley: the Flowers conſiſt, for the moſt part, of five Leaves, which expand in form of a Roſe: each of theſe Flowers are ſucceeded by two oblong, gibboſe, furrow'd Seeds, which on one Side have a leafy Border.

The *Species* are;

1. Ligusticum *vulgare, foliis apii. J. B.* Common Lovage.

2. Ligusticum *Scoticum, apii folio. Tourn. Scotch* Lovage, with a Parſley-leaf.

3. Ligusticum *Græcum, apii folio. T. Cor. Greek* Lovage, with a Parſley-leaf.

4. Ligusticum *foliis multiplicato-pinnatis, foliolis pinnatim inciſis. Lin. Hort. Cliff.* Lovage with many Pair of *Pinnæ*, and the little Leaves cut; commonly called *Cicutaria*, or Baſtard Hemlock.

The firſt of theſe Plants is often uſed in Medicine, and was formerly reckoned amongſt the Kitchen-herbs; but is now almoſt intirely caſt out of the Kitchen-garden, and only cultivated for phyſical Uſes. This Plant may be eaſily propagated by ſowing the Seeds, ſoon after they are ripe, in a moiſt Spot of Ground: and when the Plants come up the Spring following, they ſhould be tranſplanted out to the Diſtance of eighteen Inches or two Feet aſunder, in a moiſt Soil; where, if they are kept clear from Weeds, they will thrive exceedingly, and the ſecond Summer will produce Seeds: but the Herb may be frequently cut for Uſe; their Roots abiding ſeveral Years, will ſhoot again continually after being cut; ſo that a few Plants will be ſufficient for the Uſe of a Family.

The ſecond and third Sorts are only preſerved in Collections of Plants for Variety; but are not in any Uſe at preſent. Theſe may be propagated in the ſame manner as the former.

The fourth Sort has by ſome Perſons been ſuppoſed to be the Hemlock of the Antients: it is a very ſtrong Plant: when the Leaves are bruiſed, they emit a very rank Odour; and the Plant is generally thought to be very poiſonous: tho' *Parkinſon* writes, That he could find no poiſonous or ſtinking Smell in the Plant which he cultivated in his Garden: but that muſt have been a different Plant from this: for a more fetid Scent was never obſerved in any Plant.

This is extreme hardy: if the

Seeds are permitted to ſcatter, the Plant will come up the following Spring: but when the Seeds are ſown in the Spring, they generally lie in the Garden a whole Year. As this Plant grows very large, it will require three Feet Space at leaſt; and it will grow upward of four Feet high.

LIGUSTRUM, The Privet.

The *Characters* are;

The Leaves grow by Pairs oppoſite to each other: the Flower conſiſts of one Leaf, is tubulous, and divided at the Top into five Segments: the Ovary in the Centre of the Flower-cup becomes a globular ſoft Fruit, full of Juice, in which are lodg'd four Seeds.

The *Species* are;

1. LIGUSTRUM *vulgare. Park. Theat.* The common Privet.
2. LIGUSTRUM *foliis majoribus & magis acuminatis, toto anno folia retinens. Pluk. Alm.* The ever-green Privet.
3. LIGUSTRUM *foliis e luteo variegatis. H. R. Par.* The yellow-blotch'd Privet.
4. LIGUSTRUM *foliis argentatis. Breyn. Prod.* The ſilver-ſtriped Privet.
5. LIGUSTRUM *aculeatum, fructu teſticulato. Plum. Cat.* Prickly *American* Privet, with teſticulated Fruit.

The firſt of theſe Plants is very common in the Hedges in moſt Parts of *England*, and therefore it is not ſo much valued by the generality of People, as ſome Shrubs which are more rare; but it deſerves a Place in Plantation of Shrubs, as it adds to the Variety: it commonly grows about eight or ten Feet high, in form of a Shrub; but may, by Art, be trained up to a much greater Height, and may be intermixed amongſt other Trees of middling Growth in Wilderneſſes.

This Shrub is frequently cultivated in the Nurſeries near *London*, to furniſh the ſmall Gardens and Balconies in the City, it being one of the few Plants which will thrive in the Smoke of *London*: but altho' it will live ſome Years in the cloſe Part of the Town, yet it ſeldom produces Flowers after the firſt Year, unleſs in ſome open Places, where there is a free Air. In the Country the Leaves will continue green great Part of the Winter: it flowers in *June*, and the Berries ripen in Autumn, which generally hang upon the Branches till *Chriſtmas*.

The ſecond Sort will grow much larger than the firſt, and is equally hardy. The Leaves of this commonly remain upon the Trees until the Spring, unleſs in very hard Winters; for which Reaſon it is more eſteemed than the common Sort.

The Leaves of this Sort are broader than thoſe of the firſt, and are of a deeper Green; the Bunches of Flowers are larger, and of a purer white Colour; the Berries are alſo much larger, and of a ſhining black Colour; therefore make a fine Appearance in *October* and *November*. This Sort will grow to fourteen or ſixteen Feet; and is a proper Shrub to fill up in Wilderneſs-quarters.

I cannot but think this Sort, which is the moſt common in *Italy*, is the *Liguſtrum* mentioned by *Virgil* in the ſecond Eclogue: and my Reaſon for it is, that as the Flowers of this Shrub are of a pure White, but fall off very ſoon, they are by no means proper to gather for Garlands, *&c.* and the Berries being of a fine black Colour, and continuing long upon the Plants, make a fine Appearance. To confirm that theſe Berries were gathered for Uſe, we find in ſeveral Authors of undoubted Credit, that they were uſed in dyeing, as alſo that the beſt Ink was made of them.

Beſides, is it not much more reaſonable to ſuppoſe, that *Virgil* would rather draw his Compariſon from the Flowers and Fruit of the ſame Plant, when he is warning the Youth not to truſt to his Beauty, than to mention two different Plants, as has been generally ſuppoſed? for here are the white Flowers of the Privet appearing early in the Spring, which is an Alluſion to Youth; but theſe are of ſhort Duration, ſoon falling away; whereas the Berries, which may be applied to mature Age, are of long Continuance, and are gathered for Uſe.

Theſe Plants are eaſily propagted by laying down their tender Shoots in Autumn, which in one Year's time will be rooted enough to tranſplant; when they may be removed to the Places where they are deſigned to remain, or planted in a Nurſery for two or three Years; where they may be trained for the Purpoſes deſign'd.

They are alſo propagated by Suckers, which theſe Plants ſend forth in great Plenty: but theſe are too apt to put out a great Number of Suckers from their Roots; ſo are not eaſily kept within Bounds; nor do the Plants riſe ſo high, as thoſe which are propagated by Layers; therefore this Method ſhould be preferred.

Formerly theſe Plants were greatly in Uſe for Hedges; but ſince ſo many others of greater Beauty have been introduced, which are much preferable to theſe for ſuch Purpoſes, they have been intirely rejected, the Trouble in keeping them in Order being very great; nor are the Hedges made with them ever ſo thick and handſome, as thoſe made with divers other Plants.

The two variegated Kinds are pretty Varieties amongſt other ſtriped Shrubs. Theſe may be propagated by budding, or inarching them upon the plain Sort, as alſo by laying down their Branches; but as they ſeldom ſhoot ſo faſt, as to produce many Branches proper for Layers, the other Method is chiefly us'd. The ſilver-ſtriped Sort is ſomewhat tenderer than the plain; but will endure the open Air, if planted in a dry Soil, and in a warm Situation; but if either of the variegated Kinds be planted in a moiſt rich Soil, they are ſubject to become plain from their vigorous Growth.

LILAC, The Pipe-tree.

The *Characters* are;

The Flowers conſiſt of one Leaf, are funnel-ſhaped, but divided at Top into five Segments, and are collected into oblong ſpecious Spikes: the Flowers are ſucceeded by compreſs'd Pods, which are ſcarce an Inch long, and are divided into two Cells, in which are contained broad flat Seeds, which are compreſs'd on their Edges.

The *Species* are;

1. LILAC *Matthioli*. The common blue Lilac, or Pipe-tree.

2. LILAC *flore albo. Tourn.* The white Lilac, or Pipe-tree.

3. LILAC *flore ſaturate purpureo. Tourn.* The deep-purple Lilac, or Pipe-tree.

4. LILAC *flore albo, foliis ex luteo variegatis. Cat. Plant. Hort.* The yellow-blotch'd Lilac.

5. LILAC *flore albo, foliis ex albo variegatis. Cat. Plant. Hort.* The white-blotch'd Lilac.

6. LILAC *folio liguſtri. Tourn.* Lilac with Privet-leaves, falſly called the *Perſian* Jaſmine.

7. LILAC *laciniato folio. Tourn.* Lilac with cut Leaves, falſly called the cut-leav'd *Perſian* Jaſmine.

8. LILAC *folio liguſtri, flore albo.* The privet-leav'd Lilac, or *Perſian* Jaſmine, with a white Flower.

The three firſt Sorts commonly grow eighteen or twenty Feet high, and are very great Ornaments to Quarters of flowering Trees in the Spring during their flowering Seaſon, if rightly diſpos'd amongſt Trees of the ſame Growth. The firſt and ſecond Sorts are more common than the third; but the third is much preferable to the ſecond, the Flowers of that growing much cloſer upon the Bunches, and are of a finer purple Colour, and the Trees generally produce them in greater Quantities; ſo that this, and the white Sort, being regularly intermixed, afford an agreeable Variety, tho' the ſecond may be admitted to add a Luſtre to the other.

Theſe Plants are eaſily propagated by Suckers, which they ſend forth in great Plenty from the old Plants. Theſe ſhould be taken off in *October*, and planted into a Nurſery, where they may remain three or four Years; after which time they will be fit to tranſplant into the Wilderneſs, where they are to continue: they will require no other Culture than to dig the Ground about them every Year, and take off the Suckers which are produc'd from their Roots; which, if ſuffered to remain, would ſtarve the old Plants, and grow up into an irregular Thicket.

As theſe Plants are always propagated by Suckers, their Roots are always diſpoſed to ſend out great Plenty of Suckers again; therefore where there is not Care taken to clear away theſe every Autumn, they will grow into a Thicket, and the old Plants will be ſtinted in their Growth, and not appear ſo beautiful: but altho' this Method of propagating theſe Plants is by much the eaſieſt, yet I would chooſe that of laying down the Branches, becauſe the Plants ſo raiſed will not be liable to produce Suckers; therefore are much to be preferred, eſpecially for ſmall Gardens.

Theſe Trees thrive beſt on light rich Ground, where there is a Depth of Soil; for on ſtrong ſhallow Soils they grow moſſy, and make little Progreſs. Where theſe are planted in a good Soil, they will grow upward of twenty Feet high, and produce great Numbers of Flowers; but in ſtiff ſhallow Ground they ſeldom arrive to half that Height; nor do they produce many Flowers.

During the time theſe Shrubs are in Flower, there are very few others comparable to them for Beauty or Sweetneſs; the Leaves being large, and of a beautiful Green, ſet off the Flowers greatly: but theſe ſeldom continue in Beauty longer than eight or ten Days, unleſs the Seaſon proves cool and moiſt, when they will remain a Fortnight or longer.

The two variegated Sorts are preſerved by ſome Perſons, who delight in ſtriped Plants, as Curioſities; but they have no great Beauty in them; for in Summer-time, when theſe Plants are free of Growth, their white and yellow Blotches do not appear very plain; and when they do, it appears more like a Diſtemper in them, than any real Beauty. Theſe may be propagated by budding or inarching them upon the common Sort.

The privet-leav'd Lilacs are of humbler Growth than thoſe before-mention'd, ſeldom riſing above ſix or ſeven Feet high; but are very great Ornaments in ſmall Wilderneſs-quarters of flowering Shrubs, where being intermix'd with other Shrubs of the ſame Growth, they afford an agreeable Proſpect. Theſe produce their Flowers in much longer and ſlenderer Bunches than the other Sorts, and have a more agreeable Scent.

They may be propagated from Suckers, as the former; but as they ſeldom produce them in ſuch Plenty, hence the moſt expeditious Method is, to propagate them by Layers, which will take Root in one Year fit to tranſplant; and the Plants thus raiſed will have better Roots, and not ſo liable to put out Suckers as the other; ſo ſhould be preferred to them.

The Sort with white Flowers is an accidental Variety from the other; and having pale Flowers, inclining to white, is preſerved by the Nurſery-gardeners, for the ſake of Variety.

The cut-leav'd Sort differs from the other in having many of its Leaves deeply cut into ſeveral Segments; the Flowers are alſo of a brighter purple Colour, and make a finer Appearance.

Theſe are very hardy Shrubs, and will grow in almoſt any Situation; but they thrive beſt on a light loamy Soil. They flower in *May*, and their Flowers are of longer Duration than thoſe of the common Lilac.

LILIASTRUM. *Vide* Hemerocallis.

LILIO-ASPHODELUS. *Vide* Hemerocallis & Crinum.

LILIO-FRITILLARIA. *Vide* Fritillaria.

LILIO-HYACINTHUS. *Vide* Scilla.

LILIO-NARCISSUS. *Vide* Amaryllis.

LILIUM, The Lily.

The *Characters* are;

It hath a bulbous Root, conſiſting of ſeveral fleſhy Scales adhering to an Axis: the Stalk is greatly furniſhed with Leaves: the Flower is compos'd of ſix Leaves, and is ſhap'd ſomewhat like a Bell: in ſome Species the Petals are greatly reflex'd, but in others but little: from the Centre of the Flower riſes the Pointal, which becomes an oblong Fruit, that is commonly triangular, divided into three Cells, and full of compreſs'd Seeds, which are border'd, lying upon each other in a double Row.

The *Species* are;

1. Lilium *album, flore erecto & vulgare. C. B. P.* Common white Lily.

2. Lilium *album inodorum, flore pleno. H. R. Par.* The double white Lily, without Smell.

3. Lilium *album, floribus dependentibus, ſive peregrinum. C. B. P.* The foreign white Lily, with hanging Flowers.

4. Lilium *album, lato caule, multiflorum. H. R. Par.* The white Lily, with broad flat Stalks, bearing many Flowers.

5. Lilium *album vulgare, foliis ad limbos flaveſcentibus. H. L.* Common white Lily, with ſtrip'd Leaves.

6. Lilium *album, flore lineis purpureis variegato. D. Marchant.* The white Lily, ſtrip'd with Purple.

7. Lilium *purpureo-croceum majus. C. B. P.* The common Orange-lily, *vulgo*.

8. Lilium *pumilum cruentum. Park. Par.* The dwarf red Lily.

9. Lilium *rubrum, multiplici flore. Park. Par.* The double red Lily.

10. Lilium *bulbiferum anguſtifolium. C. B. P.* Narrow-leav'd bulbiferous Lily, commonly call'd the Firy-lily.

11. Lilium *floribus reflexis, montanum. C. B. P.* The Imperial Martagon.

12. Lilium *floribus reflexis albis punctatis. C. P. B.* The white-ſpotted Martagon.

13. Lilium *floribus reflexis albis*

non punctatis. C. B. P. The white Martagon, without Spots.

14. LILIUM *floribus reflexis, montanum, flore pleno. H. R. Par.* The double-flowering Martagon.

15. LILIUM *flavum anguſtifolium, flore flavo, maculis nigris diſtincto. C. B. P.* The ſpotted *Canada* Martagon, *vulgo*.

16. LILIUM *miniatum odorum anguſtifolium. C. B. P.* The ſcarlet Martagon of *Pompony, vulgo*.

17. LILIUM *Byzantinum miniatum polyanthos. C. B. P.* The ſcarlet Martagon, with many Flowers.

18. LILIUM *Byzantinum miniatum. C. B. P.* The common ſcarlet Martagon.

19. LILIUM *Byzantinum, flore flavo. C. B. P.* The yellow Martagon of *Conſtantinople*.

20. LILIUM *purpureo-croceum majus, foliis ex luteo eleganter variegatis.* The Orange-lily, with beautiful variegated Leaves.

21. LILIUM *purpureum minus, flore pleno. C. B. P.* Leſſer red Lily, with a double Flower.

22. LILIUM *cruentum polyanthos. Hort. Eyſt.* Firy-lily, with many Flowers.

23. LILIUM *bulbiferum latifolium majus. C. B. P.* Greater broad-leav'd bulb-bearing Lily.

24. LILIUM *bulbiferum minus. C. B. P.* Smaller bulb-bearing Lily.

25. LILIUM *floribus reflexis, montanum, flore albicante. C. B. P.* The Martagon with a whitiſh Flower.

26. LILIUM *floribus reflexis, montanum, flore maculis rubris inordinatis aſperſo.* The Martagon with Flowers ſpotted inordinately with red.

27. LILIUM *floribus reflexis, montanum, flore carneo. H. R. Par.* The pale red or fleſh-coloured Martagon.

28. LILIUM *floribus reflexis, montanum, longiore ſpica. C. B. P.* The Martagon with a long Spike of Flowers.

29. LILIUM *floribus reflexis variis, ſive tertium. C. B. P.* The ſtrip'd Martagon.

30. LILIUM *floribus reflexis, polyanthos album punctatum. C. B. P.* The white-ſpotted Martagon, with many Flowers.

31. LILIUM *Byzantinum ſerotinum. Hort. Eyſt.* The late flowering Martagon of *Conſtantinople*.

32. LILIUM *floribus reflexis, Americanum maximum, flore rubente, ſerotinum.* The greateſt *American* late-flowering Martagon, with red Flowers.

There are ſome other Varieties of theſe Plants, which are preſerved in the curious Gardens abroad, moſt of which were formerly in *England* (as may be gather'd from *Parkinſon*, and ſeveral other Writers upon curious Flowers); but theſe which are here mention'd are all the Sorts I can, at preſent, find in the Gardens near *London:* tho' it is very probable, many of the other Sorts may be found in ſome old Gardens of this Kingdom, which were formerly poſſeſs'd by curious Delighters in Flowers: for as moſt of theſe Sorts are very hardy, and will grow with little Culture, ſo when they are once fix'd in a Garden, they are not very ſubject to decay, unleſs their Roots are deſtroy'd, but will abide many Years without any Care; therefore from ſuch Places there may be Hopes of retrieving thoſe Flowers again.

The common white Lily is ſo well known, that it will be needleſs to ſay any thing of it in this Place. The ſecond Sort with double Flowers is, by ſome Perſons, preſerved by way of Curioſity; but there is no Beauty in it; for the Flowers ſeldom open, and have no Scent; ſo that it ſcarcely deſerves a Place in a good Garden. The third Sort with pendulous Flowers is ſometimes called the white *Conſtantinople* Lily, from whence it was formerly brought; but is now become almoſt as plenty as the common white Lily in many Gardens: this differs from the common Sort in having ſlender Stems, which are of a purpliſh Colour; and the Petals of the Flowers are narrower, and the Flowers are ſomewhat leſs, and always hang down.

Theſe Plants are all very hardy, and require no other Culture, than to be taken up every other Year (in *July*, after the Flowers are decay'd), and pull off the Suckers from them; which, if ſuffer'd to remain on, would ſtarve the old Roots, and cauſe them to flower very weak: but they ſhould not be kept long out of the Ground, nor removed after their Leaves appear above-ground; both which will weaken the Roots ſo much, that they will not flower the following Summer. They increaſe greatly from Off-ſets, whereby they are become ſo common as to be little eſteem'd.

The fourth Sort is only an accidental Variety of the common white Lily, which proceeds from the Strength of the Roots, and by two or three Stems joining together in one, as is frequently obſerved in the Buds of Aſparagus, and many other Kinds of Vegetables; in which, whenever this happens, they are always flat: but this is far from being a diſtinct Species: however, as it hath been mentioned by many Writers on Botany, I thought proper to inſert it in this Place.

The ſtrip'd-leav'd Lily is a great Ornament to Flower-borders during the Winter-ſeaſon, their beautiful variegated Leaves always appearing in *September*; and are continu'd all the Winter, making a fine Appearance in the Depth of Winter, when few other Plants are in Beauty: for which Reaſon this Plant hath been greatly propagated of late Years. This is increas'd as the common Sort; but the Roots ſhould always be planted in a freſh light Soil, in which they will thrive exceedingly: but if you make the Ground rich with Dung, it will certainly deſtroy them, as will alſo a very wet or ſtrong Soil. The Seaſon for tranſplanting theſe Roots is the ſame with the common Sort.

The white Lily ſtrip'd with Purple has not been many Years brought into *England*. Of this Kind there are two Sorts; one of which is much more beautifully variegated than the other; both of which were obtain'd originally from Seed. Theſe are both propagated in the ſame manner as the common Sort; but ſhould be planted in a dry ſandy Soil, mix'd with a little Lime-rubbiſh, and expos'd to the morning Sun: in which Soil and Situation they will flower exceeding well, and their Stripes will be much deeper colour'd than when they are planted in a richer Soil, and their Roots will make a better Increaſe.

The Orange-lily is ſo well known, that it is needleſs to ſay any thing of it here. That Sort which is commonly call'd the double Orange-lily, differs from the common only in having two or three more Petals in each Flower, which is not conſtant, but very apt to degenerate to the common Sort; ſo that it is ſcarcely worth preſerving, unleſs for Variety-ſake. Theſe are propagated by Off-ſets from the old Roots, which are commonly ſent forth in great Plenty; and therefore the Roots ſhould never remain more than two Years unremov'd, becauſe the Number of Offſets would greatly weaken them, and render their Flowers ſmall, and fewer in Number. Theſe may be tranſplanted any time from the Beginning of *Auguſt* to the End of *October*; for they do not ſhoot again ſoon after their Stems are decay'd, as do the white Lilies; but, on the contrary, remain till *February* before they appear above-ground; but, however, they ſhould not be removed later than *October*. They will grow in almoſt any Soil or Situation, but beſt in a dry light Soil, and an open Expoſure.

The bulbous firy Lily produces its Flowers three Weeks before the common Sort, and is much more beautiful. This Sort was formerly more common than at preſent, as were ſeveral other Sorts of Lilies: it is equally as hardy as the common Sort, and doth increaſe much faſter: for upon the Flower-ſtems, between the Wings of the Leaves and the Stalk, are produc'd ſmall Bulbs; which, when taken off, and planted, become ſtrong Roots in two Years; ſo that it may be render'd very plentiful in a ſhort time, were People to plant all their Increaſe. This requires the ſame Soil and Culture as the Orange-lily; as doth alſo the dwarf red Lily, which is nearly allied to this. They will grow under Trees; which renders them proper to plant in Wilderneſſes; where, when intermix'd amongſt other hardy Flowers of the ſame Growth, they will make a beautiful Appearance, and are very uſeful to furniſh Baſins and Flower-pots for Halls, Chimneys, *&c.* during the Seaſon of Flowering.

The Imperial Martagon is very common in moſt old Gardens in *England*. This is equally as hardy as the common Lily, and requires no other Culture: the Flowers are produced the latter End of *May*, and make a very handſome Figure in the Middle of large Borders in a Flower-garden; but the Scent is too ſtrong to be borne by may People: for which Reaſon they ſhould never be placed in Baſins of Flowers in a Room, nor be planted too near the Houſe.

The white, and the white-ſpotted Martagons flower about the Middle of *June*, or ſometimes later. Theſe produce a greater Number of Flowers upon a Stalk than the former; but the Flowers are ſeldom ſo large, and commonly grow more ſparſedly on the Stalks. Theſe have a ſtrong Scent, but not quite ſo diſagreeable as the former. The Roots of theſe Plants ſhould be tranſplanted ſoon after their Stems decay; for if they are taken up late in the Autumn, they ſeldom produce their Flowers ſtrong the ſucceeding Summer. Theſe require a freſh light Soil, and an open Situation: if they are ſuffered to remain three Years undiſturb'd, they will make a good Increaſe, and produce ſtrong Flowers.

The double Martagon requires the ſame Soil and Culture with the two laſt. This produces a large Quantity of fair double Flowers upon each Stem, which renders it very valuable: the Flowers commonly appear the Beginning of *July*, or ſomewhat later.

The ſpotted *Canada* Martagon is much tenderer than any of the former. The Roots of this Sort ſhould be planted in a warm Border, where they may be protected from ſevere hard Froſts, by covering the Surface of the Ground with Peas-haulm, *&c.* It muſt alſo have a freſh light dry Soil, and ſhould be planted at leaſt ſix Inches deep: for when the Roots lie near the Surface, they are often injured by Froſts in Winter.

This Plant was originally brought from *Canada* by the *French*, from whom we were firſt ſupply'd with it; but ſince we have receiv'd many Roots of it from *Virginia*, where it alſo grows in great Plenty in the Fields. The Flowers of this Kind are almoſt as large as thoſe of the Orange-lily, but are more reflex'd, and of a fine yellow Colour, ſpotted with Black: this flowers in *July*.

The red Martagon of *Pompony* is one of the moſt beautiful Sorts of all the Martagons which I have yet ſeen; and produces the greateſt Number of Flowers upon a Stem of any of the Kinds (eſpecially when the Roots are ſtrong, and have remain'd undiſturb'd two or three Years), when they will many times have upward of fourſcore Flowers upon a Stem: the Flowers are not ſo large, nor ſo deep-coloured, as the ſcarlet Martagon, but rather of a yellowiſh-red Colour, and ſpotted with black: this flowers commonly the Latter-end of *May*, or the Beginning of *June*.

The Roots of this Plant are tender, and will not endure to be often tranſplanted; for that will deſtroy them: the beſt Seaſon to remove them, is ſoon after their Stems decay; when they ſhould never be kept long out of the Ground, but planted again as ſoon as poſſible. Theſe require a freſh light ſandy Soil, but will by no means thrive in a rich moiſt Soil, which will cauſe them to rot; and they muſt have an open Expoſure; for if they are overhung by Trees, they will not thrive. This ſhould alſo be planted as deep in the Ground as the *Canada* Martagon, for the ſame Reaſon as was before obſerv'd on that.

The ſcarlet Martagon with many Flowers is in ſome curious Gardens very common, it being a very hardy Plant in reſpect to Cold, which it endures very well, and is eaſily propagated from Off-ſets, as the other Sorts; but muſt have a warm light dry Soil, which ſhould not be dung'd, nor overſhadow'd with Trees, either of which will cauſe the Roots to decay. This is a very beautiful Flower, and very proper to adorn the Borders of large Flower-gardens. It produces its Flowers in *July*, after moſt of the other Sorts, which are of a deep-ſcarlet Colour, growing many upon a Stalk.

The other ſcarlet Martagon is alſo common in ſome Gardens, but is not ſo much valu'd as the laſt: the Flowers are not ſo deep-colour'd, and it ſeldom has more than ſix or eight upon a Stem. This flowers about the time of the former, and requires the ſame Soil and Culture.

The yellow Martagon of *Conſtantinople* is very rare in *England* at preſent, and only to be found in the Gardens of ſome curious Collectors of theſe Beauties. This requires much the ſame Culture as the two laſt-mentioned; but muſt not be often remov'd, which will not only weaken the Root, but alſo prevent its flowering. When the Roots of this Kind have been ſtanding three Years upon a good freſh dry Soil, I have obſerved above forty Flowers upon a Stem, which have made a very beautiful Appearance. This flowers about the ſame Seaſon as the former.

The ſtrip'd-leav'd Orange-lily is a very beautiful Plant, and was a few Years ſince ſold at a very great Price; but of late it hath been more common, as being eaſily propagated by Off-ſets; ſo that when it is once obtain'd, it may be ſoon increas'd to what Number you pleaſe, provided you plant it in a dry Soil, and a warm Situation. This beautiful Plant was, ſome Years ſince, accidentally produc'd from Seeds of the common

Orange-lily, which were ſhed upon a Border, where they were ſuffered to grow, until this Plant appear'd with its fine variegated Leaves; which the Owner, upon Diſcovery, mark'd, and, at a proper Seaſon, remov'd into a better Situation, where it throve, and increas'd ſo well, as in a few Years to be ſpread into divers Parts of the Kingdom. This Plant muſt never be planted in a rich Soil, which will greatly diminiſh its Beauty, and many times cauſe the Roots to decay.

The ſeven Sorts next-mentioned are alſo worthy of a Place in every good Garden. Theſe were ſome Years paſt in greater Plenty in the *Engliſh* Gardens, than they are at preſent; but in ſome of the curious Gardens in *Holland* they are yet preſerved: theſe are as hardy as thoſe before-mentioned, and ſhould be treated in the ſame way. The laſt Sort was brought from *America*, where it grows wild in the *Savannas*: this hath a Stem upwards of three Feet high, and produces a large Number of beautiful Flowers upon each Stem; and as it ſeldom flowers till after all the others are over, ſo it is the more valuable. This is hardy in reſpect to Cold, but muſt have a light dry Soil.

All the Sorts of Lilies and Martagons may be propagated by ſowing their Seeds; by which Method ſome new Varieties may be obtain'd, provided the Seeds are ſav'd from the beſt Sorts; eſpecially the Martagons, which are more inclinable to vary than the other Lilies. The manner of ſowing them is as follows:

You muſt be provided with ſome ſquare Boxes about ſix Inches deep, which ſhould have Holes bored in their Bottoms to let the Wet paſs off: theſe Boxes ſhould be fill'd with freſh light ſandy Earth, and in the Beginning of *Auguſt*, ſoon after the Seeds are ripe, you muſt ſow them thereon pretty thick, covering them over with light ſifted Earth about half an Inch; then place the Boxes where they may have the morning Sun only; obſerving, if the Seaſon ſhould prove dry, to refreſh them often with Water, as alſo to pull out all Weeds which may be produced. In this Situation the Boxes ſhould remain until *October*, when you muſt remove them where they may have as much Sun as poſſible, as alſo be ſcreen'd from the cold North and Eaſt Winds, during the Winter-ſeaſon: but in the Spring of the Year, about the Beginning of *April*, you muſt remove the Boxes into their former Poſition; for now the young Plants will appear above-ground, which are impatient of too much Heat: beſides, the Earth in the Boxes will dry too faſt at this Seaſon, if expos'd to the full Sun at Noon. You muſt alſo obſerve, at this Seaſon, to keep them intirely clear from Weeds, as alſo to refreſh them gently with Water, if the Seaſon ſhould prove dry: in this Place you ſhould let the Boxes remain until the Beginning of *Auguſt*, at which time you ſhould prepare ſome Beds of the above-mention'd freſh light Earth, which muſt be levell'd very even: then take the Earth out of the Boxes, together with the ſmall Bulbs, and ſtrew it equally over the Beds, covering it over about half an Inch thick with fine-ſifted Earth; and if the Seaſon ſhould prove very hot and dry, you would do well to ſhade the Beds in the Middle of the Day from the great Heat of the Sun, and to refreſh them now-and-then with Water.

You muſt alſo obſerve to keep them intirely clear from Weeds; and if the following Winter ſhould prove very cold, you muſt cover the Beds with Peas-haulm, or ſome other light Covering, to keep out the Froſt, which would prejudice the Roots, if ſuffer'd to enter deep into the Ground (eſpecially while they are ſo young): but you muſt never let the Covering remain on in mild Weather, which would alſo be very injurious to them.

In *February*, when the hard Froſts are over, you ſhould gently clear off the Earth upon the Surface of the Beds (which, during the Winter-ſeaſon, will often have contracted a Moſſineſs); and ſift a little freſh Earth equally over the Beds, which will greatly encourage the Roots: but in doing this, you muſt be very careful not to ſtir the Ground ſo deep as to injure the Roots: nor ſhould you defer doing it too late, leſt the Shoots ſhould be coming up; which, by this Operation, might be broken, and greatly hurt: and as the Seaſon advances, you muſt be careful to clear them from Weeds, and in dry Weather to water them; and in very hot Days, if you ſhade them from the Sun, it will be of great Service to them: but this need not be done till the Latter-end of *April*, or the Beginning of *May*, when the Seaſon is ſometimes very hot and dry.

When their Leaves are quite decay'd, you ſhould ſtir the Surface of the Beds again (but do not go too deep); which will prevent the Weeds from growing very faſt, and be of Service to the Roots: and in *September* you muſt ſift ſome more freſh Earth over the Beds about half an Inch thick: and in Winter and Spring you muſt manage them as was directed for the preceding Year.

In *September* following theſe Roots will require to be tranſplanted to a greater Diſtance, when you muſt prepare ſome Beds of the ſame freſh light Earth, as was before directed, making them level: then take up the Roots, and tranſplant them into the Beds, placing them about eight Inches aſunder, obſerving to put the Roots with their Buds uppermoſt, and about four Inches below the Surface.

This Work ſhould be done when the Weather is moiſt; for if the Roots are tranſplanted in a very dry Seaſon, and there doth not happen Rain ſoon after, they will take a Mouldineſs, which many times rots them.

You muſt alſo obſerve, as was before directed, to keep the Beds intirely clear from Weeds: and in Winter, if the Froſt ſhould be very ſevere, you muſt cover them with Peas-haulm, to prevent the Roots from being injured thereby: and in the Spring you ſhould take off the Earth from the Surface of the Beds, as before, laying ſome freſh thereon, and ſo continue the Summer and Winter's Work, as before.

The ſecond Year after being planted in theſe Beds, the ſtrongeſt Roots will begin to flower; at which time, if you obſerve any peculiar Varieties, you ſhould put down a Stick by each of thoſe Roots to mark them; which may be taken up when their Leaves are decay'd, and remov'd into the Borders of the Flower-garden, or tranſplanted into other Beds at a greater Diſtance, to encourage them to flower ſtrong. But you can't be a Judge which of thoſe will be good by their firſt Flowers; therefore you ſhould never reject any of them until they have flower'd two or three Years; for many times ſome of theſe Flowers will make but a mean Appearance the firſt Year, and afterwards become fair handſome Flowers, when they have obtained Strength; ſo that you ſhould ſuffer all ſuch, of whoſe Worth you are not aſſured, to remain undiſturbed two or three Years, that you may be aſcertain'd which of them are worthy preſerving; which ſhould be remov'd into the Flower-garden at a proper Seaſon: but the ordinary ones may be rejected, or planted in ſhady outer Walks, where, tho' they are mean Flowers, they will appear well enough.

LILIUM CONVALLIUM. *Vide* Convallaria.

LILIUM PERSICUM. *Vide* Fritillaria.

LILIUM SUPERBUM. *Vide* Glorioſa.

LIME-TREE. *Vide* Tilia.

LIMON, The Lemon-tree.

The *Characters* are;

It hath large ſtiff Leaves like the Citron, without any Appendage at the Bottom: the Flowers conſiſt of many Leaves, which expand in form of a Roſe: the Fruit is almoſt of an oval Figure, and divided into ſeveral Cells, in which are lodged hard Seeds ſurrounded by a thick fleſhy Subſtance, which, for the moſt part, is full of an acid Juice.

The *Species* are;

1. LIMON *vulgaris. Ferr. Heſp.* The common Lemon.
2. LIMON *dulcis. Ferr. Heſp.* The ſweet Lemon.
3. LIMON *acris. Ferr. Heſp.* The leſſer ſour Lemon.
4. LIMON *dulci medulla, vulgaris. Ferr. Heſp.* The common ſweet Lemon.
5. LIMON *pyri effigie. Ferr. Heſp.* The pear ſhap'd Lemon.
6. LIMON *Imperialis. Ferr. Heſp.* The Imperial Lemon.
7. LIMON *Adami Pomum commune. Ferr Heſp.* Lemon, commonly called *Adam*'s Apple.
8. LIMON *ſpineolas. Ferr. Heſp.* The wild Lemon, *vulgo*.
9. LIMON *ſtriatus vulgatior. Ferr. Heſp.* The furrow'd Lemon.
10. LIMON *citratus, altero fœtus. Tourn.* The Childing Lemon, *vulgo*.
11. LIMON *qui lima acris dicitur. Ferr. Heſp.* The ſour Lime.
12. LIMON *qui lima dulcis dicitur. Ferr. Heſp.* The ſweet Lime.
13. LIMON *vulgaris, foliis ex luteo eleganter ſtriatis.* The gold-ſtrip'd Lemon.
14. LIMON *vulgaris, foliis ex albo variegatis.* The ſilver-ſtrip'd Lemon.

There are ſome other Varieties of theſe Trees in the curious Gardens abroad, from whence we may expect to be ſupply'd with them all, ſince there are every Year large Quantities of theſe Trees brought over from *Italy*, where the Gardeners are as fond of any new Kinds to ſupply their Cuſtomers with, as our Countrymen are of new Sorts of Fruit. But ſince theſe Varieties are annually increaſed from Seeds, like other Fruits, it would be needleſs to attempt an Account of them all, becauſe in a very ſhort time many new Varieties may be produced.

The Fruit of the four firſt Sorts are generally brought over from *Liſbon* every Year in great Plenty, and are ſold promiſcuouſly in *London*, in Winter and Spring; as are great Numbers of the Trees; which are annually brought over from *Italy*.

The fifth, ſixth, and ſeventh Sorts are preſerv'd, for their Variety, in many curious Gardens; but the fifth is very uncommon in *England* at preſent.

The ſixth is a very large beautiful Sort, and of an agreeable Flavour: this has produced very good Fruit in divers Gardens in *England*, which have been as well-taſted as any of thoſe which are brought over from *Italy*.

The ſeventh Sort is ſomewhat tenderer than the other, and requires a warmer Situation in Winter; otherwiſe the Fruit is very ſubject to drop off at that Seaſon.

The eighth Sort is commonly call'd the wild Lemon (though improperly), becauſe it has many Thorns upon the Branches; but this will produce very fair Fruit in this Kingdom. The Flowers of this Kind are generally of a rediſh or purpliſh Colour on the Outſide before they open; but afterwards fade, and change to a paler. The Leaves of this are alſo of a very deep Green, and gently ſerrated upon their Edges.

The furrow'd Lemon is in divers Gardens in *England*, where the Fruit very often ripens well, and is chiefly kept for Variety, as differing from the common Sort in having deep Furrows in the Fruit; but it is not ſo good for Uſe, nor does the Fruit produce ſo much Juice, as the common Sort.

The childing Lemon is alſo preſerved as a Curioſity, the old Fruit commonly producing a young one from its Centre.

The two Sorts of Limes are likewiſe in many Gardens in this Kingdom; but theſe require the ſame Degree of Warmth as the Shaddock Orange, in order to produce Fruit; for if they are placed among Orange-trees, the Fruit will fall away in Winter, and come to nothing.

The two variegated Sorts are preſerved for their ſtrip'd Leaves (which are greatly eſteem'd by ſome Perſons who are curious in collecting variegated Plants); but theſe are tenderer than the plain Sorts; and if not duly attended in Winter, will be very apt to caſt their Leaves, and appear very unſightly.

There is alſo another Sort, which produces double Flowers; but this ſeems not to be very conſtant; for I have obſerv'd upon the ſame Tree ſome Flowers ſingle, and others double, at the ſame time.

All theſe Sorts are propagated by budding or inarching them on Stocks of Lemons or Citrons produced from Seeds; but they will not ſo readily unite on Orange-ſtocks; for which Reaſon the Citrons are preferable to either Oranges or Lemons for Stocks, as they readily join with either Sort; and being of larger Growth, cauſe the Buds of the other Sorts to ſhoot much ſtronger than if they were on Stocks of their own Kind. The Method of raiſing theſe Stocks, and the Manner of budding them, being already exhibited under the Article of *Aurantium*, it would be ſuperfluous to repeat it here.

The Culture of the Lemon being the ſame with that of the Orange-tree, it would be alſo needleſs to repeat it here: therefore I ſhall only obſerve, that the common Lemons are ſomewhat hardier than the Oranges, and will bring their Fruit to Maturity with us better than they will do, and require a greater Share of freſh Air in Winter; for which Reaſon they ſhould always be placed nearer to the Doors or Windows of the Green-houſe: and in ſome curious Gardens theſe Trees have been planted againſt Walls; where, by covering them with Glaſſes in Winter, and protecting them from ſevere Froſt, they have produced plenty of large Fruit: as theſe Trees generally produce ſtronger Shoots, ſo they require more Water to be given them, than the Orange; but as to the tender Sorts, they muſt be treated with a little more Care, otherwiſe their Fruit will fall off in Winter, and come to nothing. Theſe Things being fully exhibited before, I refer the Reader (as I hinted) to the Article *Aurantium*, where their Culture is fully ſet forth.

LIMONIUM, Sea-lavender.

The *Characters* are;

It hath a fibroſe Root: the Stalks are naked and branched: the Cup of the Flower is long and tubuloſe, but expanded at the Top: the Flower in ſome Species conſiſts of one Leaf, but in others of ſeveral, and is ſhaped like a Clove-gilliflower: the Pointal, which ariſes out of the Flower-cup, becomes an oblong Fruit, wrapt up in the Flower-cup, as in an Huſk.

The *Species* are;

1. LIMONIUM *maritimum majus. C. B. P.* Common great Sea-lavender.

2. LIMONIUM *maritimum majus alterum ſerotinum Narbonenſe. H. R. Par.* Another large late-flowering Sea-lavender of *Narbonne*.

3. LIMONIUM *maritimum minus, oleæ folio. C. B. P.* Small Sea-lavender, with an Olive-leaf.

4. LIMONIUM *Anglicum minus, caulibus ramoſioribus, floribus in ſpicis rarius ſitis. Raii Hiſt.* Leſſer *Engliſh* Sea-lavender, with branch'd Stalks, and Flowers ſeldom growing in a Spike.

5. LIMONIUM *Orientale, plantaginis folio, floribus umbellatis. T. Cor. Oriental* Sea-lavender, with Plantain-leaves, and Flowers growing in an Umbel.

6. LIMONIUM *peregrinum, foliis aſplenii. C. B. P.* Foreign Sea-lavender, with Spleenwort-leaves.

7. LIMONIUM *Siculum lignoſum, gallas ferens, & non ferens. Bocc. Rar.* Woody *Sicilian* Sea-lavender.

8. LIMONIUM *minus, flagellis tortuoſis. Bocc. Muſ.* Small Sea-lavender, with twiſted Shoots.

9. LIMONIUM *maritimum minus, foliolis cordatis. C. B. P.* Small Sea-lavender, with little Leaves, which are heart ſhap'd.

10. LIMONIUM *minus annuum, bullatis foliis, vel echioides. Bot. Monſp.* Small annual Sea-lavender, with ſtudded Leaves.

11. LIMONIUM *Ægyptiacum fruticoſum, foliis lanceolatis obtuſis.* Shrubby *Egyptian* Sea-lavender, with blunt ſpear-ſhap'd Leaves.

There are ſeveral other Species of this Plant, which are found upon the Sea-coaſts of *Italy*, *Spain*, and the Southern Parts of *France*; but theſe here mention'd are all the Sorts I have obſerv'd in the *Engliſh* Gardens. The firſt and fourth Sorts are found upon the Sea-coaſts in divers Parts of *England*, eſpecially the firſt, which is the moſt common; the other being only found in ſome particular Places. The eighth Sort has been found on the Coaſt of *Norfolk*. The ſecond and third Sorts are pretty common in the Southern Parts of *France*. The fifth Sort was found by Monſ. *Tournefort* in the *Levant*. The ſixth, which is the moſt beautiful of all the Sorts, was found by Mr. *Ray* in great Plenty in divers Parts of *Sicily*; and *Cluſius* obſerv'd it at *Malaga*, and about *Cadiz*. The ſeventh Sort, which grows to the Stature of a Shrub, was found in *Sicily* by Pere *Boccone*, and by him figur'd and deſcrib'd in his Book of *Rare Sicilian Plants*.

The five firſt-mention'd Sorts are pretty hardy, and will endure the Cold of our ordinary Winters very well, provided they have a ſandy Soil, and a warm Situation: theſe may be propagated by parting the

Roots toward the Latter-end of *October*. When they are planted, which ſhould be in a light ſandy Soil, you muſt water and ſhade them until they have taken Root; after which, they will require no other Culture than to keep them clear from Weeds. In *July* theſe Plants will produce beautiful Spikes or Tufts of blue or purple-coloured Flowers, which will continue in Perfection a long time; and if the Seaſon proves favourable in Autumn, they will ripen their Seeds.

The ſixth Sort is ſomewhat tenderer than the others, and muſt be preſerved in Pots fill'd with freſh light Earth, and placed in the Green-houſe in hard Weather, otherwiſe the Cold of our Winters often deſtroys them. This Plant muſt be propagated by Seeds; for it ſeldom lives longer than two Years; for which Reaſon the beſt Method is, to be furniſh'd with good Seeds from abroad (for it ſeldom perfects its Seeds in *England)*; which, if ſown upon a warm Border of freſh light Earth, will come up very well; tho' ſometimes the Seed will lie in the Ground a whole Year, before the Plants will appear. In the Summer, when the Plants have acquir'd ſufficient Strength for Tranſplantation, they muſt be taken up, and planted in Pots, placing them in the Shade until they have taken Root; after which, they may be expoſed to the open Air until *October*, when they muſt be removed into the Green-houſe, obſerving to place them where they may have as much free Air as poſſible in mild Weather. This Plant produces its Flowers in *July* and *Auguſt*, and many times continues in Beauty the greateſt Part of *September*.

The ſeventh Sort riſes to be two or three Feet high, and hath ſlender woody Branches; from which, in *July* and *Auguſt*, are produced Spikes of ſmall blue Flowers, which make a very handſome Appearance (eſpecially in a warm Seaſon, when their Flowers open kindly), and continue in Beauty a long time.

This Plant is propagated by planting ſome of the tender Cuttings in any the Summer-months, in Pots fill'd with light ſandy Earth, and placed in a moderate Hot-bed to facilitate their taking Root; and after they are rooted, they may be expos'd to the open Air until *October*, when they muſt be removed into a Green-houſe, placing them in a Situation where they may have as much free Air as poſſible in mild Weather: during the Winter-ſeaſon, they ſhould have frequent, but gentle Refreſhings with Water: you muſt alſo obſerve to keep them clear from decay'd Leaves and Branches, which, if ſuffer'd to remain, will render the Plants unſightly: and in the Summer-ſeaſon they ſhould be expos'd in ſome well-ſhelter'd Place amongſt other Exotic Plants.

The tenth Sort is an annual Plant, which rarely perfects Seeds in *England*; ſo that the Seeds muſt be annually procured from abroad. This is found wild in *Italy*, and ſeveral Parts of *Spain*: it flowers with us the Beginning of *September*, and is commonly deſtroyed by the firſt Froſts in the Autumn.

The eleventh Sort is a ſhrubby Plant, which grows five or ſix Feet high. The Seeds of this Sort I received from *Egypt* ſome Years ſince. This Sort is hardy enough to live thro' the Winter in a common Green-houſe, and may be treated in the ſame manner as hath been directed for the ſeventh Sort.

LINARIA,

LINARIA, Toad-flax.

The *Characters* are;

The Leaves are oblong, and produced alternately on the Branches: the Cup of the Flower conſiſts of one Leaf, which is divided into five long acute Segments: the Flower, which conſiſts of one Leaf, is of an anomalous perſonated Figure, ending in a Tail behind, and in the Fore-part divided into two Lips, of which the upper is cut into two or more Parts, and the under into three: the Ovary (which riſes from the Centre of the Flower-cup) becomes a roundiſh Fruit or Huſk, divided into two Cells or Apartments, by an intermediate Partition, and full of Seeds, which are ſometimes flat and boarded, ſometimes cornered and roundiſh, adhering to the Placenta.

The *Species* are;

1. LINARIA *vulgaris lutea, flore majore. C. B. P.* Common yellow Toad-flax, with a large Flower.

2 LINARIA *purpurea major odorata. C. B. P.* Great purple ſweet-ſmelling Toad-flax.

3. LINARIA *latifolia Dalmatica, magno flore. C. B. P.* Broad-leav'd *Dalmatian* Toad-flax, with a large Flower.

4. LINARIA *latiſſimo folio, Luſitanica. Tourn.* Broad-leav'd *Portugal* Toad-flax.

5. LINARIA *Hiſpanica procumbens, foliis glaucis, flore luteo ſtriato, labiis nigro-purpureis. Spaniſh* trailing Toad-flax, with ſea-green Leaves, and yellow-ſtrip'd Flowers, with purple Lips.

6. LINARIA *Sicula multicaulis, folio molluginis. Bocc. Rar. Sicilian* Toad-flax, with many Stalks, and a Leaf of the white Ladies Bed-ſtraw.

7. LINARIA *triphylla minor lutea. C. B. P.* Small three leav'd yellow Toad-flax.

8. LINARIA *triphylla minor lutea, floris vexillo & calcari purpureo. Boerh. Ind.* Small three-leav'd yellow Toad-flax, with the Standard and Heel of a purple Colour.

9. LINARIA *ſegetum, nummulariæ folio villoſo. Inſt. R. H.* Corn Toad-flax, with an hairy Moneywort-leaf, commomly called Fluellin or Female-ſpeedwel.

10. LINARIA *ſegetum, nummulariæ folio aurito & villoſo, flore luteo. Inſt. R. H.* Corn Toad-flax, with an hairy eared Moneywort-leaf, and a yellow Flower.

11. LINARIA *pumila vulgatior arvenſis. Inſt. R. H.* Common low annual Toad-flax.

12. LINARIA *hederaceo folio glabro, ſeu Cymbalaria vulgaris. Inſt. R. H.* Toad-flax with a ſmooth Ivy-leaf, commonly known by the Name of *Cymbalaria.*

13. LINARIA *quadrifolia lutea. C. B. P.* Four-leav'd yellow Toad-flax.

14. LINARIA *annua anguſtifolia, floſculis albis longius caudatis. Triumphet.* Narrow-leav'd annual Toad-flax, with ſmall white Flowers, having long Tails or Spurs.

15. LINARIA *quadrifolia ſupina. C. B. P.* Trailing four-leav'd Toad-flax.

16. LINARIA *capillaceo folio, odora. C. B. P.* Sweet-ſmelling Toad-flax, with a very narrow-Leaf.

17. LINARIA *Orientalis, flore luteo maximo. Tourn. Cor. Eaſtern* Toad-flax, with a very large yellow Flower.

18. LINARIA *latifolia triphylla, flore purpureo magno, rictu aureo. Inſt. R. H.* Broad three-leav'd Toad-flax, with a large purple Flower having a golden Standard.

19. LINARIA *annua anguſtifolia, flore majore luteo. Mor. Hiſt.* Narrow-leav'd annual Toad-flax, with a larger yellow Flower.

The firſt of theſe Plants grows in great Plenty upon the Sides of dry Banks in moſt Parts of *England*, and is ſeldom cultivated in Gardens; for it is a very troubleſome Plant to keep within Bounds, the Roots being very apt to ſpread under-ground, and riſe at a great Diſtance from the Mother-plant, whereby it greatly injures whatever Plants ſtand near it. This is one of the Species mention'd in the Catalogue of Simples at the End of the *College Diſpenſatory* to be uſed in Medicine.

The ſecond is a perennial Plant, which is often cultivated in Gardens: this produces fine Spikes of purple Flowers in *June* and *July*, and it being a very hardy Plant, growing in almoſt any Soil or Situation, ſhould be admitted into every large Garden, where it may be planted in ſhady Situations, or upon the middle of large Borders in the Pleaſure-garden, in which Place it will make an handſome Appearance, and continues a long time in Flower.

This Plant is propagated by ſowing the Seeds in Spring, which will come up ſoon after: and the Plants muſt be tranſplanted out into Beds at the Diſtance of ſix or eight Inches; in which Beds they may remain until the *Michaelmas* following (obſerving to keep them clear from Weeds); at which time they ſhould be tranſplanted into the Places where they are to remain for good, and will require no other Culture than only to keep them clear from Weeds; and when the Flower-ſtems advance in the Spring, they ſhould be ſupported by Stakes, otherwiſe they are ſubject to be broken by ſtrong Winds: they may alſo be propagated by parting their Roots in Autumn; but as the Seed ripens very well, it is the better Way to raiſe them from that; or if the Seeds are permitted to ſcatter, the Plants will come up, and require very little Care.

The third and fourth Sorts are tenderer than the laſt, and ſhould be planted in a dry Soil, and a warm Situation; otherwiſe they are often deſtroyed in Winter. Theſe are propagated by Seeds in the ſame manner as the former, as alſo by parting their Roots; but it is adviſeable always to keep ſome of theſe Plants in Pots, that they may be removed into Shelter in the Winter, otherwiſe in hard Froſts they will be kill'd.

The fourth is the moſt beautiful Sort of them all: this produces very large Spikes of purple Flowers, which make a fine Appearance; but it ſeldom produces ripe Seeds in this Country; ſo that the Seeds muſt be obtain'd from abroad, and the Plants propagated from Off-ſets or Cuttings; which, if planted in the Spring, will take Root very well, whereby it may be maintain'd.

The fifth Sort was brought over from *Gibraltar* by Sir *Charles Wager*, *Anno* 1727. and hath ſince been communicated to ſeveral curious Perſons: this Plant is eaſily propagated by parting the Roots, or planting Cuttings in any of the Summer-months, which, if water'd and ſhaded, will ſoon take Root, and may afterwards be planted in Pots filled with freſh light undung'd Earth, in which they will ſucceed much better than in a richer Soil; for if they are planted in a fine rich Earth, it cauſes them to grow very faſt for a ſhort time, but they ſeldom fail to rot ſoon after. Theſe muſt be remov'd into Shelter in Winter, where they muſt have as much free Air as poſſible in mild Weather, and be only protected from ſevere Cold; ſo that if the Pots are placed under an Hot-bed-frame, it will be better than to place them in a Green-houſe, where they are apt to draw too much, which will cauſe them to decay. This Sort never produces Seeds in *England*.

The ſixth, ſeventh, and eighth Sorts are annual Plants, which ſhould be ſown early in the Spring upon a Bed of freſh light Earth, in the Borders of the Flower-garden, where they are to remain; for they do not bear tranſplanting well: theſe produce their Flowers in *June* and *July*, and their Seeds are ripe in *September*. The Seeds of theſe Plants may alſo be ſown in Autumn, ſoon after they are ripe, under a warm Wall or Hedge, where they will endure the Cold of our ordinary Winters very well: and theſe autumnal Plants will grow much larger, and come to flower much ſooner, than thoſe raiſed in the Spring and from theſe you will always have good Seeds.

The ninth Sort here-mentioned is directed by the College of Phyſicians, to be uſed in Medicine: this ſtands in their Catalogue of Simples under the Title of *Elatine*. This, and the tenth Sort, grows wild amongſt the Corn in divers Parts of *England*. They are both annual Plants, which ſcatter their Seeds where-ever they are permitted to grow; and the young Plants generally come up in Autumn; ſo that they are more frequently to be met with amongſt Wheat, Rye, and other Crops which are ſown in Autumn, than in ſuch Lands as are plowed in the Spring. The Flowers of theſe Plants are very ſmall, and come out at the Joints cloſe to the Footſtalks of the Leaves, and the whole Plant trails on the Ground: they uſually flower in *June*, and their Seeds are ripe in *Auguſt*.

The eleventh Sort is a low annual Plant, which is very common on arable Land in moſt Parts of *England*; ſo is ſeldom admitted into Gardens.

The twelfth Sort was originally brought from abroad; but is now become ſo common in many Parts of *England*, as to be thought a Native by ſome Perſons. This has been eſteemed a Plant very efficacious in ſome Diſtempers; but is not uſed by any of the *Engliſh* Phyſicians at preſent. It grows not only on the Ground, but on Walls, Pales, or whatever Place the Seeds fall; ſo it becomes a very troubleſome Weed where-ever it is ſuffered to ſeed.

The other Sorts are not Inhabitants of this Country; but are by the Curious preſerved in their Gardens, for the Variety of their Flowers. They are all of them Plants of ſhort Duration, ſeldom continuing after they have perfected their Seeds; ſo that where the Seeds are not permitted to ſcatter, they ſhould be ſown every Year, in order to preſerve the Kinds. The Seeds ſhould be ſown in the Places where they are deſigned to remain; for the Plants do not thrive ſo well when they are tranſplanted. Some of theſe Seeds may be ſown in the Autumn on a dry Soil, where the Plants will come up, and abide the Winter; and theſe will flower much ſooner the following Year, than thoſe which are ſown in the Spring; ſo that good Seeds may be certainly obtained from thoſe, whereas the Seeds of ſome Sorts do not ripen well in bad Seaſons on ſuch Plants which come up from the Spring-ſowing: but by ſowing at the two Seaſons there will be a longer Continuance of the Plants in Flower.

As theſe Plants require no farther Care, when they come up, but to thin them where they grow too cloſe, and to keep them clear from Weeds; ſo they may be allowed room in the Borders of large Gardens, where they will add to the Variety; for they are Plants which do not ſpread far; ſo may be kept in proper Compaſs; and the different Colours of their Flowers will make a pretty Appearance amongſt other hardy Plants.

LINGUA CERVINA, Hart's-tongue.

Theſe Plants commonly grow out from the Joints of old Walls and Buildings, where they are moiſt and ſhady; but are ſeldom cultivated in Gardens. There is a very great Variety of theſe Plants both in the *Eaſt* and *Weſt-Indies*; but there are very few of them in *Europe:* they may be propagated by parting their Roots, and ſhould have a moiſt Soil, and ſhady Situation.

LINUM, Flax.

The *Characters* are;

The Leaves, for the moſt part, grow alternately on the Branches: the Cup of the Flower conſiſts of one Leaf, is tubulous, and divided into five Parts at the Top: the Flower conſiſts of five Leaves, which expand in form of a Clove-gilliflower: the Ovary, which riſes from the Centre of the Flower-cup, becomes an almoſt globular Fruit, which is generally pointed, and compoſed of many Cells, in which are lodged many plain ſmooth Seeds, which are blunt at one End, and generally ſharp at the other.

The *Species* are;

1. LINUM *ſativum. C. B. P.* Manur'd Flax.

2. LINUM *ſativum latifolium Africanum, fructu majore. Tourn.* Broad-leav'd *African* manur'd Flax, with a large Fruit.

3. LINUM *maritimum luteum. C. B. P.* Yellow maritime Flax.

4. LINUM *ſativum humilius, flore majore. Bobart.* Dwarf manur'd Flax, with a large Flower.

5. LINUM *perenne majus cæruleum, capitulo majore. Mor. Hiſt.* Greater perennial blue Flax, with a large Head.

6. LINUM *perenne majus cæruleum, capitulo minori. Mor. Hiſt.* Greater perennial blue Flax, with a ſmaller Head.

7. LINUM *catharticum. Rupp. flor.* Mountain, or Purging Flax.

There are ſeveral Sorts of this Plant, which are preſerv'd in ſome curious Gardens of Plants for Variety-ſake; but as they are of little Uſe or Beauty, it would be needleſs to mention them in this Place.

The firſt Sort is that which is cultivated for Uſe in divers Parts of *Europe*, and is reckon'd an excellent Commodity: the right tilling and ordering of which is eſteem'd a good Piece of Huſbandry.

This ſhould be cultivated upon a rich Soil, that has not been plow'd for ſeveral Years, upon which Flax always makes the beſt Improvement: but as it draws greatly from the Soil, it ſhould not be ſown two Years together upon the ſame Ground.

The Land muſt be well plow'd, laid flat and even, upon which the Seeds ſhould be ſown about the middle of *March*, when the Weather is mild and warm. During the Spring you muſt carefully weed it; which if neglected (eſpecially in a moiſt Seaſon), the Weeds will overgrow and deſtroy the Crop. There are ſome People who recommend the feeding of Sheep with Flax, when it is a good Height; and ſay, they will eat away the Weeds and Graſs, and do the Flax good; and if they ſhould lie in it, and beat it down, or flatten it, it will riſe again the next Rain: but this muſt not be practis'd but in a moiſt Seaſon, and upon a rich Soil; for if the Ground be poor, or the Spring dry, it will not riſe again to any conſiderable Height.

All the other Sorts of Flax may be cultivated (by ſuch who have a Curioſity) by ſowing their Seeds upon a Bed of freſh rich light Earth, in *March*, or the Beginning of *April*; and when the Plants come up, they muſt be carefully weeded, which is all the Culture they require; and they will produce their Flowers, and perfect their Seeds very well.

LINUM UMBILICATUM. *Vide* Omphalodes.

LIPPIA.

This Plant was ſo named by the late Dr. *William Houſtoun*, who diſcovered it at *La Vera Cruz*, in Honour to Dr. *Auguſtus Lippi*, a famous Botaniſt, who travell'd to *Egypt*, and diſcover'd many new Plants.

The *Characters* are;

It hath an anomalous Flower, conſiſting of one Leaf, which is divided into four Parts, and reſts on the Embryo, which afterward becomes the Fruit, having two Seeds, which are incloſed in a ſmall Covering.

We know but one *Species* of this Plant at preſent; *viz.*

LIPPIA *arboreſcens, foliis conjugatis oblongis, capitulis ſquamoſis, & rotundis. Houſt.* Tree Lippia, with oblong Leaves growing by Pairs, and having round ſcaly Heads.

This Plant, in the Country of its native Growth, commonly riſes to the Height of eighteen or twenty Feet, and hath a rough Bark: the Branches come out by Pairs oppoſite, as alſo the Leaves, which are oblong, pointed, and a little ſawed on their Edges. From the Wings of the Leaves come out the Footſtalks, which ſuſtain many round ſcaly Heads, about the Size of a large Grey Pea, in which are many ſmall yellow Flowers appearing between the Scales, which are ſucceeded by the Seed-veſſels.

The Seeds of this Plant were ſent to ſeveral curious Gardens in *Europe*, where ſome of the Plants have been raiſed; but as the Country from whence it came is very warm, the Plants will not thrive in this Climate, unleſs they are preſerved in a warm Stove. Theſe may be treated in the ſame manner as the other ſhrubby Plants, which are Natives of warm Countries; which is, to keep them always in the Stove, plunged in the Bark-bed; obſerving to give them a large Share of Air in warm Weather, and frequently refreſh them with Water; but in Winter they muſt be watered more ſparingly, and be kept in a moderate Degree of Warmth; otherwiſe they will not live thro' the Winter, eſpecially while they are young; but when they have acquired Strength, they may be preſerved with a leſs Share of Warmth.

LIQUIDAMBER, The Sweet Gum, or Liquid Storax-tree.

The *Characters* are;

It hath Male and Female Flowers on the ſame Tree: the Male Flowers are produced in Spikes at the Extremity of the Branches; theſe have no Petals: the Empalement conſiſts of four oval Leaves, and incloſes a great Number of Stamina, *which are collected into a ſpherical Body: the Female Flowers are produced on long Pedicles, coming from the Baſe of the Male Flowers; theſe have no Petals, but an Empalement, the ſame* *as the Male Flowers, incloſing ſeveral Germs, which join in a ſpherical Body, ſupporting two recurved Styles: theſe afterward change to a ſpherical Fruit full of Protuberances, which are perforated, and contain many oblong Seeds.*

We have but one *Species* of this Genus; *viz.*

Liquidamber. *Clayt. Flor. Virg.* The Sweet Gum, or Liquid Storax-tree.

This Tree has by ſome Writers been ranged with the Maple; but on no other Account, except from the Similitude of the Leaves; for in Flower and Fruit it is very different from the Maple, and moſt other *Genera:* nor has it any Affinity to the Storax-tree; but the Gum which iſſues from this Tree, being tranſparent, and having a great Fragrancy, has by ſome ignorant Perſons been taken for that.

It grows plentifully in *Virginia*, and ſeveral other Parts of *North-America*, where it riſes with a ſtrait naked Stem to the Height of fifteen or ſixteen Feet, and afterward branches out regularly to the Height of forty Feet, or upward, forming a pyramidal Head. The Leaves are angular, and ſhaped ſomewhat like thoſe of the leſſer Maple; but are of a dark-green Colour, and their upper Surfaces ſhining: a ſtrong ſweet glutinous Subſtance exudes thro' the Pores of the Leaves in warm Weather, which renders them clammy to the Touch.

The Flowers are generally produced early in the Spring of the Year, before the Leaves are expanded, which are of a Saffron colour, and grow in Spikes from the Extremity of the Branches: after theſe are paſt, the Fruit ſwells to the Size of a Walnut; being perfectly round, having many Protuberances, each having a ſmall Hole, and a ſhort Tail, which extends half an Inch.

The Planks of this Tree, being beautifully veined, are often uſed in *America* for wainſcoting Rooms; but it requires a long time to ſeaſon the Boards, otherwiſe they are apt to ſhrink.

In *Europe* this Tree is cultivated in the Gardens of the Curious, for the ſake of Variety; it is hardy enough to endure the ſevereſt Cold of this Country in the open Air, and there are ſome of them upward of twenty Feet high; though I have not heard of any of them which has produced Fruit.

This is commonly propagated by Layers in *England*; but thoſe Plants which are raiſed from Seeds, grow to be much fairer Trees.

The Seeds of this Tree commonly remain in the Ground a whole Year before the Plants come up; ſo that the ſureſt way to raiſe them is, to ſow the Seeds in Boxes or Pots of light Earth; which may be placed in a ſhady Situation during the firſt Summer, and in Autumn they may be placed in a warm Situation; but if the Winter ſhould prove ſevere, it will be proper to cover them with Peas-haulm, or other light Covering; which ſhould be taken off conſtantly in mild Weather. In the following Spring, if theſe Boxes or Pots are placed upon a moderate Hot-bed, it will cauſe the Seeds to come up early, ſo that the Plants will have time to get Strength before Winter; but during the firſt and ſecond Winters, it will be proper to ſcreen the Plants from ſevere Froſt; but afterward they will bear the Cold very well.

LITHOSPERMUM, Gromwel, Gromil, or Graymil.

The *Characters* are;

The Cup of the Flower conſiſts of one Leaf, which is cut almoſt to the Baſe into five long narrow Segments: the Flower, which is, for the moſt part, ſmall, conſiſts of one Leaf, is funnel-ſhap'd, and ſpread open at the Top: the Pointal is encompaſs'd by four Embryoes, which become ſo many roundiſh hard poliſh'd Seeds.

The *Species* are;

1. Lithospermum *majus erectum. C. B. P.* Greater upright Gromil.

2. Lithospermum *perenne procumbens, flore purpureo-cœruleo majore. Mor. Hiſt.* Trailing perennial Gromil, with a purple-blue Flower.

There are ſeveral other Sorts of this Plant, which are mention'd in Botanic Authors; but as they are rarely cultivated in Gardens, I ſhall omit taking Notice of them in this Place. The firſt Sort here mention'd is that which is order'd for medicinal Uſes. This grows in ſhady Lanes, and uncultivated Places, in divers Parts of *England*; and is ſeldom cultivated in Gardens. The ſecond Sort is found wild in ſome Parts of *Wales*; but is leſs common than the former. Theſe may be cultivated by ſowing their Seeds, ſoon after they are ripe, in a Bed of freſh Earth, allowing them at leaſt a Foot Diſtance from each other; obſerving to keep them clear from Weeds, and they will thrive in almoſt any Soil or Situation.

LOAM is a common ſuperficial Earth, that is, a Mixture of Sand and Clay, commonly of a yellowiſh Colour, though there is ſome Loam that is blackiſh. Some call Loam the moſt common ſuperficial Earth met with in *England*, without any regard to the Proportion it bears to Sand or Clay; but moſt generally the Appellation of Loam is applied to a ſoft fat Earth, partaking of Clay, but eaſy to work.

It is found by Experience, that Plants of all Sorts will grow in it; and where-ever it is found, it appears to be a more beneficial Soil to Plants than any other. A Clay us'd in Grafting is alſo call'd Loam.

LOBELIA.

The *Characters* are;

It hath a tubulous anomalous Flower, conſiſting of one Leaf, which is divided into many Parts, each being ſhaped ſomewhat like a Tongue, and are ſpread open like an Hand: this is incloſed in the Cup, which afterward becomes a ſoft oval Fruit, which is full of Juice, and ſurrounds a Nut of the ſame Shape, which has an hard Shell.

We know but one *Sort* of this Plant; *viz.*

Lobelia *fruteſcens, portulacæ folio. Plum. Nov. Gen.* Shrubby Lobelia, with a Purſlain-leaf.

This Plant was ſo named by Father *Plumier*, who diſcovered it in *America*, in Honour to Dr. *Lobel*, a learned Botaniſt, who publiſhed the Figures of a great Number of Plants at *Antwerp* 1581. and two or three other Books of Botany before that time.

The Seeds of this Plant were ſent to *England* by Mr. *Cateſby* in the Year 1724. who gathered them in the *Bahama Iſlands*, where the Plants grow in plenty, near the Shore of the Sea; and ſince that time the Seeds have been ſent to *England* by Dr. *William Houſtoun*, who gather'd them at *La Vera Crux*: ſo that I believe the Plant is common in moſt of the warm Parts of *America*.

It is propagated by Seed, which muſt be procured from the Countries of its natural Growth; for the Plants will not produce them in *Europe*. Theſe Seeds ſhould be ſown in Pots filled with light ſandy Earth, and then plunged into an Hot-bed of Tanners Bark, where the Plants will come up in about three Weeks, provided the Bed is kept warm, and the Earth often watered. When the Plants are up, they ſhould be kept in a temperate Hot-bed, and frequently refreſhed with Water; but it muſt not be given them in large Quantities; for they are very ſucculent, and ſubject to periſh with a great Degree of Moiſture, eſpecially while they are young. When the Plants are about two Inches high, they ſhould be carefully taken out of the Pots, in which they were ſown, and each planted in a ſeparate ſmall Pot filled with freſh light ſandy Earth, and then plunged into the Hot-bed again; obſerving to ſhade them in the Heat of the Day until they have taken new Root. In this Hot-bed the Plants may remain until the Middle or Latter-end of *September*, when they muſt be removed into the Stove, and plung'd into the Tan-bed, in the warmeſt Part of the Stove; for they are very tender Plants while young; therefore muſt be kept very warm, otherwiſe they will not live through the Winter in this Country. In the Spring following the Plants may be ſhifted into ſomewhat larger Pots, and then plunged into a freſh Hot-bed to forward their Growth; for if they are not puſhed on while they are young, they ſeldom grow to any Size, nor will they ever flower; ſo that in order to have them in any Beauty, they muſt be carefully managed. The Height to which theſe Plants uſually grow, is five or ſix Feet; and they divide into ſeveral Branches, which are ſucculent; as are alſo the Leaves, which are as thick, and full of Moiſture, as Purſlain; and being ever-green, they make an agreeable Diverſity among other tender Exotic Plants in the Stove; for they are too tender to be removed into the open Air in this Country, even in the warmeſt Seaſon of the Year. The Leaves of this Plant are very ſubject to contract Filth, by being conſtantly kept in the Stove; therefore they ſhould be waſhed with a Sponge frequently, to keep them clean, otherwiſe they will appear unſightly.

LOBUS ECHINATUS. *Vide* Bonduc.

LONCHITIS, Rough Spleenwort.

The *Characters* are;

The Leaves are like thoſe of the Fern; but the Pinnulæ *are ear'd at their Baſe: the Fruit alſo is like that of the Fern.*

The *Species* are;

1. LONCHITIS *aſpera*. *Ger.* Rough Spleenwort.

2. LONCHITIS *aſpera major*. *Ger. Emac.* Greater rough Spleenwort.

The firſt of theſe Plants is very common in ſhady Woods, by the Sides of ſmall Rivulets in divers Parts of *England*: but the ſecond Sort is not quite ſo common, and has been brought into ſeveral curious Botanic Gardens from the Mountains in *Wales*. There are alſo great Variety of theſe Plants in *America*, which at preſent are Strangers in the *European* Gardens. They are ſeldom cultivated but in Botanic Gardens, for the ſake of Variety; where they muſt have a moiſt Soil, and ſhady Situation.

LONICERA, Upright Honeyſuckle, *vulgo*.

The *Characters* of this Genus are;

The Flower is tubulous, and of one Leaf, which is deeply cut into ſeve-

ral Segments, which are reflexed: from the Empalement ariſe ſix long Stamina, *ſurrounding the Pointal, which are extended the Length of the Petals: the Ovary reſts on the Empalement, which afterward turns to a Berry, in which are included one or two compreſſed Seeds, ſurrounded by a glutinous Pulp.*

The *Species* are;

1. LONICERA *flore coccineo, baccis nigris. Plum. Nov. Gen.* Lonicera with a ſcarlet Flower, and black Berries.

2. LONICERA *pedunculis bifloris, baccis diſtinctis, floribus bilabiatis, foliis integerrimis. Flor. Leyd.* The Upright red-berried Honeyſuckle.

3. LONICERA *pedunculis bifloris, foliis ovatis acutis integris. Lin. Hort. Cliff.* The Fly Honeyſuckle, *vulgo*.

4. LONICERA *pedunculis bifloris bilabiatis, bacca ſolitaria globoſa integerrima. Flor. Leyd.* The blue-berried Upright Honeyſuckle, *vulgo*.

5. LONICERA *pedunculis bifloris, baccis diſtinctis, foliis ſerratis. Flor. Leyd.* The Upright blue-berried Upright Honeyſuckle, with double Fruit.

6. LONICERA *pedunculis bifloris, baccis diſtinctis, floribus infundibuliformibus, ramis divaricatis. Flor. Leyd.* The *Pyrenean* Upright Honeyſuckle.

7. LONICERA *pedunculis bifloris, baccis diſtinctis, foliis cordatis obtuſis. Hort. Upſal.* Upright Honeyſuckle, with blunt heart-ſhaped Leaves.

8. LONICERA *floribus verticillatis ſeſſilibus, foliis ovato-lanceolatis coalitis, fructu triſpermo. Lin. Hort. Cliff.* Dr. *Tinker*'s Weed, or falſe Ipecacuana.

The firſt Sort was diſcovered by Father *Plumier*, in ſome of the *French* Settlements in *America*: it was afterward found by Dr. *William Houſtoun* at *Campechy*, who ſent the Seeds to *England*. This Plant is very tender; ſo cannot be preſerved in this Country through the Winter, unleſs it is placed in a warm Stove. The Seeds of this (as alſo of all the other Sorts) remain a whole Year in the Ground before the Plants appear; therefore when the Seeds are brought to *England*, they ſhould be ſown in Pots of light Earth, and placed in a ſhady Situation during the firſt Summer; and in the Autumn, the Pots ſhould be plunged into a Bed of Tanners Bark, where they may be ſecured from the Cold; and the following Spring they ſhould be removed into a freſh Hot-bed, which will bring up the Plants early in the Spring. When theſe are fit to remove, they ſhould each be planted in a ſeparate Pot, and plunged into the Hot-bed, and treated as other tender Plants which are Natives, of the ſame Country.

The Upright red-berried, and the Fly Honeyſuckle, have been long cultivated in the Nurſeries near *London*, and are commonly ſold as flowering Shrubs, to fill up Wilderneſs-quarters; but their Flowers are ſmall, and have little Beauty to recommend them; but as theſe Shrubs have a different Appearance from moſt others, a few of each may be admitted for the ſake of Variety. The firſt of theſe ſeldom grows above four Feet high; the Branches grow erect, and form an handſome Shrub. The other will grow ſeven or eight Feet high, and the Branches of this do not grow quite ſo regular as thoſe of the other. The Flowers of this Sort are white, and thoſe of the other are of a dark-purple Colour. They are produced two together on the ſame Footſtalk, from the Setting on of the Leaves.

Theſe Shrubs are Natives of the Mountains in *Germany*; ſo are extreme hardy: they may be propagated by Layers, which ſhould be laid down in the Autumn, as ſoon as the Leaves begin to decay; and by the next Autumn they will have made good Root; ſo may be tranſplanted either into a Nurſery for two or three Years, to get Strength, or the Places where they are deſign'd to remain.

They may alſo be propagated by Cuttings, which ſhould be planted in a ſhady Border of loamy Earth in the Autumn; and if the Spring ſhould prove dry, they muſt be duly watered: if this is obſerved, they will have good Roots by the following Autumn, and may then be treated as the Layers.

The ſingle blue-berried Upright Honeyſuckle is now in ſeveral Nurſeries near *London*, though not very plenty. This Sort produces its Flowers very early in the Spring, about the ſame time as the Mezereon; but there is no great Beauty in the Flowers; however, it ſhould have a Place in every curious Garden of Plants.

The fifth, ſixth, and ſeventh Sorts are yet very rare in *England*; theſe are Natives of the *Alps*, *Pyrenees*, and other mountainous Places; ſo are extremely hardy. Theſe Shrubs ſeldom riſe above three or four Feet high; ſo may be intermixed with others of the ſame Growth: they love a ſhady Situation, and a moiſt Soil.

They may be propagated by Cuttings or Layers, in the ſame manner as hath been directed for the former Sorts; and when they are rooted, they ſhould be planted in a Nurſery for two or three Years, to get Strength, before they are planted out for good.

The laſt Sort is an herbaceous Plant, which decays to the Root every Year, and riſes again the Spring following. This grows plentifully in moſt Parts of *North America*, where the Root has been long uſed for the Ipecacuana, to which this Plant ſeems to be near akin; for by ſome dried Specimens which were ſent me of the true Ipecacuana, there ſeems but little Difference between the two, in the Leaves and Growth of the Plant, nor in their Fruit; but the Roots have a very different Figure.

This Plant is called in *America* Fever-root, and Dr. *Tinker*'s Weed, from the Phyſician who firſt brought it into Uſe for the Cure of Fevers. This was titled by Dr. *Dillenius*, in the *Hortus Elthamenſis*, *Trioſteoſpermum*, from the Fruit having three Seeds in each.

It is a very hardy Plant; ſo will endure the greateſt Cold of this Country in the open Air; and delights in a light moiſt Soil, and a ſhady Situation, where it may have only the morning Sun. It riſes with ſeveral Stalks from the ſame Root, to the Height of two Feet or upward: theſe are garniſhed with oblong Leaves, which are broad in the Middle, but draw to a Point at each End: theſe are ſet on by Pairs, and the Tails of the Leaves cloſely embrace the Stalks. The Flowers are produced in Whorles round the Stalks, at the Setting on of the Leaves; and are of a dark purple Colour, ſhaped like thoſe of the Upright Honeyſuckle: theſe are ſucceeded by yellow ſucculent Berries, which have three Seeds in each.

It may be propagated by the Seeds; but theſe commonly remain a whole Year in the Ground before they come up, eſpecially when they are kept out of the Ground till the Spring; therefore it is the beſt Way to ſow them in the Autumn, ſoon after they are ripe. It may alſo be propagated by parting of the Roots; but this ſhould not be done oftener than every third Year, leſt it weaken the Plants.

LOTUS, Birds-foot Trefoil.

The *Characters* are;

It hath a papilionaceous Flower: the Ovary, which riſes out of the Flower-cup, afterward becomes a Pod; ſometimes diſtinguiſh'd, as it were, into Cells, by tranſverſe Partitions, which are full of Seeds for the moſt part roundiſh: to which may be added, The Leaves grow by Threes; but have two Wings, or little Leaves, at the Origin of their Footſtalks.

The *Species* are;

1. Lotus *villoſus altiſſimus, flore glomerato. Tourn.* The talleſt hairy Birds-foot Trefoil, with a glomerated Flower.

2. Lotus *pentaphyllus ſiliquoſus villoſus. C. B. P.* Upright hoary Birds-foot Trefoil.

3. Lotus *πολυκερατος fruteſcens Cretica argentea, ſiliquis longiſſimis propendentibus rectis. Mor. Hiſt.* Shrubby ſilver Birds-foot Trefoil of *Crete*, with long ſtrait hanging Pods.

4. Lotus *hæmorrhoidalis humilior & candidior. Tourn.* Lower and whiter Hæmorrhoidal Birds-foot Trefoil.

5. Lotus *anguſtifolius, flore luteo purpureo, ex inſula Sancti Jacobi. Hort. Amſt.* Narrow-leav'd Bird's-foot Trefoil from the Iſland of *St. James*, with a purple-yellow Flower.

6. Lotus *ruber, ſiliqua anguloſa. C. B. P.* Red ſquare-codded Birds-foot Trefoil, commonly call'd Winged Peas.

7. Lotus *ruber, ſiliqua anguloſa, folio variegato. Boerh. Ind.* Red ſquare-codded Birds-foot Trefoil, with a variegated Leaf.

8. Lotus *ſiliquis ornithopodii. C. B. P.* Birds-foot Trefoil, with Pods like a Bird's-Foot.

9. Lotus *ſiliquoſa maritima lutea, Cytiſi facie. Barr. rar.* Maritime Birds-foot Trefoil, with the Face of Cytiſus.

10. Lotus *ſiliquis geminis, peregrina. Boerh. Ind. alt.* Foreign Birds-foot Trefoil, with two Pods on each Stalk.

The firſt Sort dies to the Ground with us every Winter, and riſes again the ſucceeding Spring; and when the Roots are ſtrong, the Shoots will be four or five Feet high, and produced in great Plenty. If it be cut while young, the Cows are very fond of it; but Horſes will not eat it, unleſs they are very hungry.

The Roots, when ſtrong, will admit of the Shoots being cut three or four times in a Summer; for they put out again ſoon after they are cut, and grow very ſtrong in a ſhort time; but this Plant does not come up before *April* in our Country, and commonly dies down in *October*; ſo that if it were the beſt Fodder for Cattle, it could only be obtained in Summer; for I am afraid it will hardly be of any Uſe when dried.

It may be propagated from the Seeds, which are generally produced in great Plenty, and muſt be ſown very thin in Rows, at about eighteen Inches aſunder, the Beginning of *April*; and in *May*, when the Plants will be come up, the Ground ſhould be hoed between the Rows, in order to deſtroy the Weeds, and the Plants cut up, where they are too thick (for they ſhould be eight or ten Inches apart in the Rows at leaſt); for tho' they will appear but weak at their firſt coming up, yet when their Roots have taken faſt hold of the

Ground, they will increaſe their Strength greatly; for I have had a ſingle Root of this Plant, which has been a Foot Diameter over the Crown, and hath produced above an hundred Shoots.

You muſt alſo continue hoeing the Ground from time to time as the Weeds are produced, which, if permitted to overgrow the Plants while they are young, will certainly deſtroy them; ſo that the firſt Seaſon they muſt be managed with great Care; but afterwards, when the Plants have obtained more Strength, they will be capable of encountering the Weeds; tho' then the Ground between the Rows ſhould be ſtirr'd with a Breaſt-plough after the Crop is cut down, which will greatly promote its Growth.

This Plant delights in a dry barren gravelly Soil, on which it will reſiſt the ſevereſt Cold of our Climate, and abide many Years.

It may alſo be propagated by planting Cuttings or Slips taken from the old Plants in *July*, when they have acquired an Hardneſs, which ſhould be planted in a moiſt cloudy Seaſon, or watered and ſhaded, and in a ſhort time they will take Root; but as this is difficult to perform when a Quantity is deſign'd, ſo the better way is to propagate it by Seeds.

The ſecond, third, and fourth Sorts are preſerved in Gardens as Curioſities; theſe are impatient of much Cold, and muſt therefore be planted in Pots, and houſed in Winter, otherwiſe they are often deſtroyed in our Country. Theſe may be all propagated by ſowing their Seeds upon a moderate Hotbed in the Spring; and when the Plants are come up, they muſt be tranſplanted into Pots, and plunged into an Hot-bed, to promote their taking Root; after which in *May* they ſhould be removed into the open Air, where they muſt be placed in ſome well-ſheltered Situation, amongſt other Exotic Plants, in which Place theymay remain until the Middle or End of *October*, following when they muſt be removed into the Green-houſe, obſerving to place them whete they may have as much free Air as poſſible in mild Weather; for if they are kept too cloſely ſhut up, or ſtand under the Branches of other Trees or Plants, they are very apt to draw very weak, and decay ſoon after: they muſt alſo be often refreſhed with Water; but it ſhould not be given them in Winter in too great Quantities; for that will rot their Roots: in the Spring they ſhould be inured very early to the open Air, into which they ſhould always be removed at the Beginning of *May*, or earlier, according as the Seaſon proves favourable.

Theſe may alſo be propagated by planting Cuttings, in any of the Summer-months, into a Bed of light Earth, obſerving to water and ſhade them until they have taken Root; after which they may be planted into Pots filled with freſh light Earth, and muſt be managed as was directed for the Seedling-plants. They all produce their Flowers in *June*, *July*, and *Auguſt*; and moſt of them ripen their Seeds very well in *England*.

The fourth Sort is hardy enough to live abroad in moderate Winters, provided it is planted in a dry Soil, and a warm Situation. This will produce plenty of Seeds every Year.

The fifth Sort is by much the moſt beautiful of all the Kinds: this will grow to the Height of three Feet, with woody Stems, and Branches which are garniſhed with long narrow hoary Leaves: the Flowers are of a dark Copper-colour, approaching to black: theſe are continued in Succeſſion upward of nine Months; ſo that the Plants are never deſtitute of Flowers, but in the middle of Winter, which renders them more valuable.

This may be propagated by Seeds, which ſhould be ſown upon a moderate Hot-bed early in the Spring: and when the Plants are fit to remove, they ſhould be each planted into a ſeparate ſmall Pot filled with light Earth, and plunged into a freſh Hot-bed, to bring them forward: but they muſt not be kept too cloſe; for that will cauſe them to draw up weak: they muſt alſo be hardened to bear the open Air, into which they ſhould be removed in *June*; and in *July* they will begin to flower: during the Summer-ſeaſon theſe Plants ſhould remain abroad in a ſheltered Situation; but in Autumn they muſt be removed into the Conſervatory; for the early Froſts in Autumn will ſoon deſtroy them, if they are expoſed to the open Air. Theſe Plants ſhould be placed in a very dry Glaſs-caſe in Winter, where they may be preſerved from Damps; for they are very ſubject to grow mouldy in damp Weather, and this often deſtroys them; ſo that they can ſeldom be preſerved in a common Green-houſe: and if they are placed in a Stove, they are apt to draw up weak, and rendered ſhort-liv'd. The Seeds of this Plant commonly ripen well in *England*, when the Summers are warm: but when they fail, the Plants may be propagated by Cuttings, which muſt be planted in Pots, and plunged into an Hot-bed; where, if they are ſhaded from the Sun in the Heat of the Day, and duly watered, they will ſoon take Root; and afterward muſt be treated as hath been directed for the Seedling-plants.

The ſixth Sort is an annual Plant, which by many People is ſown here-and-there, in ſmall Patches, upon the Borders of the Flower-garden, with other ſmall Annuals, amongſt which it makes a pretty Variety.

The Flowers of this Plant (which are in form of a Pea-bloſſom) are of a deep-red Colour, and are ſucceeded by Pods with four Angles or Wings (which occaſioned their being called Winged Peas) containing ſeveral hard round Seeds. The Pods of this Sort are by ſome Perſons eaten as Peas when young; and are cultivated in ſome Gardens as an eſculent Plant.

It is eaſily propagated by ſowing the Seeds in *March* or *April*, upon the Borders where they are to remain; for they do not thrive ſo well when tranſplanted: and they will require no farther Care than only to keep them clear from Weeds. In *June* they will begin to flower, and continue till *Auguſt*, ſoon after which their Seeds will ripen.

The ſeventh Sort is only a Variety of the ſixth, from which it differs in having a variegated Leaf: this Difference it commonly retains from Seeds, which is what few other Plants will do. This may be propagated as the former.

The eighth Sort is only preſerved in ſome Gardens, more for the Oddneſs of its Pods, which very much reſemble a Bird's Foot, than for any particular Beauty of the Plant: but in a large Garden it may be admitted, for the ſake of Variety. This may be propagated in the ſame manner as the two former; and is alſo annual, as they.

The ninth Sort is a biennial Plant: this is found wild in *Portugal* and *Spain*, growing upon the

Shore near the Sea: this Sort will rarely live thro' the Winter in the open Air in *England*; therefore the Plants ſhould be potted, and placed under an Hot-bed-frame in Winter; where they ſhould have as much free Air as poſſible in mild Weather, but ſheltered from hard Froſt: this may be propagated by ſowing the Seeds in *April*, upon a Bed of light Earth; and when the Plants are fit to remove, ſome of them may be tranſplanted into ſmall Pots, and placed in a ſhady Situation until they have taken Root; and afterward they may be expoſed to the Sun all the Summer, and in Autumn removed into Shelter: but ſome few Plants may be planted in the full Ground, in a warm Situation, where in a favourable Winter they may remain without Shelter: and thoſe Plants which live abroad will flower much better, and more certainly produce Seeds, than thoſe Plants in the Pots.

The tenth Sort is an annual Plant, reſembling very much the eighth Sort: the Branches of both theſe trail upon the Ground, and ſpread to a conſiderable Diſtance; but the Flowers, being very ſmall, have no Beauty; ſo that theſe are only preſerved by Perſons who are curious in Botanical Studies: theſe ſhould be ſown in *April*, in the Places where they are to remain; for they do not love to be tranſplanted.

There are two or three Varieties of this Bird's-foot Trefoil, which grow wild in moſt Parts of *England*: when theſe are upon dry, gravelly, chalky Land, they are very low humble Plants, ſpreading on the Surface of the Ground: but in rich moiſt Land they grow much larger; and one of the Sorts will ſometimes produce Branches near two Feet in Length: the Seeds of theſe Plants have been ſold, and recommended as profitable to ſow for Fodder, by ſome Huſbandry-Quacks, by the Name of Ladies-finger-graſs: but I never could find any Animal that would eat it, either green or dry.

LOTUS ARBOR. *Vide* Celtis.

LOVE-APPLE. *Vide* Lycoperſicon.

LUDWIGIA.

The *Characters* are;

The Empalement of the Flower is of one Leaf, cut into four Segments at the Top, and ſits upon the Embryoes: the Flower conſiſts of four heart-ſhaped Petals, which are equal, and ſpread open: in the Centre of the Flower is ſituated the four-cornered Pointal, attended by four Stamina: *the Pointal afterward becomes a four-corner'd Fruit, crown'd with the Empalement; and has four Cells, which are full of ſmall Seeds.*

The *Species* are;

1. Ludwigia *capſulis ſubrotundis. Lin. Hort. Cliff.* Ludwigia with round Seed-veſſes.

2. Ludwigia *capſulis oblongis uncialibus. Flor. Leyd.* Ludwigia with Seed-veſſels an Inch in Length.

We have no *Engliſh* Name for this Plant; but it is very near akin to the *Onagra*, or Tree-primroſe. The ſecond Sort is by Father *Plumier* ranged in that Genus: but Dr. *Linnæus* has removed this to a great Diſtance, on account of the Number of *Stamina*, which in the Flowers of this Genus are but four; whereas thoſe of the *Onagra* have eight: but Dr. *Van Royen*, in the *Flora Lugdunenſis*, has brought them together in his Claſs, intituled, *Fructifloræ floribus quadrifidis.*

Theſe are both annual Plants, which muſt be raiſed on an Hot-bed in the Spring, and treated in the ſame manner as hath been directed for the *Amaranthus*; for if they are not brought forward in the Spring, they ſeldom produce good Seeds in *England*. I received the Seeds of both theſe Sorts from my good Friend Dr. *Dale*, from *South-Carolina*.

LUFFA, *Egyptian* Cucumber.

The *Characters* are;

It hath a bell-ſhaped Flower, conſiſting of one Leaf, which is divided into five Parts to the Centre: there are Male and Female Flowers on the ſame Plant: the Male Flowers are produced on ſhort Foot-ſtalks, having no Embryoes: but the Female Flowers reſt on the Top of the Embryoes, which afterward becomes a Fruit like a Cucumber to outward Appearance, but is not fleſhy, the inner Part conſiſting of many Fibres, which are elegantly netted: and there are three Cells, which are filled with Seeds, which are almoſt of an oval Shape.

We have but one *Sort* of this Plant; *viz.*

Luffa *Arabum. Tourn.* The Luffa of the *Arabians*.

There are two Varieties of this Plant, one having white, and the other black Seeds; but theſe are not diſtinct Species.

This Plant may be propagated after the ſame manner as Cucumbers and Melons, by ſowing the Seeds on an Hot-bed the Beginning of *March*: and when the Plants are come up, they muſt be pricked into a freſh Hot-bed to ſtrengthen the Plants, obſerving to let them have freſh Air every Day in warm Weather, and to refreſh them frequently with Water. When the Plants have four or five Leaves, they ſhould be planted out on an Hot-bed, where they are deſigned to remain, which ſhould be under Frames, and but one Plant put into each Hole; for as theſe Plants ſend forth a great Number of Side-ſhoots, ſo where they are planted too cloſe, they will entangle one into the other, and become ſo thick, as to cauſe the Fruit to drop. In the Management of theſe Plants after they are planted out for good, there muſt be the ſame Care taken as for Melons and Cucumbers, with this Difference only, that theſe require a larger Share of Air in warm Weather; otherwiſe the Vines will grow weak, and will not produce Fruit.

When the Plants have ſpread, ſo as to fill the Frames on every Side, the Frames ſhould be raiſed on Bricks, and the Ends of the Plants drawn out, that they may have room to grow; for when theſe Plants are in a vigorous State, they will ſpread eight or ten Feet; ſo that if they are confined, they will become ſo thick, as to rot the tender Branches which are covered from the Air, and there will be no Fruit produced.

The Fruit, when it is young, is by ſome People, eaten, and made into Mango's, and preſerved in Pickle; but it hath a very diſagreeable Taſte, and is not accounted very wholſome: wherefore theſe Plants are ſeldom cultivated in *Europe*, except by ſuch Perſons as are curious in Botany, for Variety.

LUNARIA, Moonwort, Sattin-Flower, or Honeſty.

The *Characters* are;

The Flower conſiſts of four Leaves, which expand in form of a Croſs: the Ovary (which riſes in the Centre of the Flower) becomes a compreſs'd perfectly ſmooth Fruit, divided, as it were, into two Cells by an intermediate Partition, to which adhere the parallel and membraneous Valves, and filled with Seeds, which have commonly a broad Border, and are ſhaped like a Kidney.

The *Species* are;

1. Lunaria *major, ſiliqua rotundiore*,

diore. J. B. Greater Moonwort, with round Pods, commonly called Honeſty, or White Sattin.

2. LUNARIA *major, ſiliqua longiore. J. B.* Greater Moonwort, with a longer Pod.

3. LUNARIA *major perennis, ſiliqua rotundiori, flore albo. Tourn.* Greater perennial Moonwort, with a rounder Pod, and a white Flower.

4. LUNARIA *leucoii folio, ſiliqua oblonga majori. Tourn.* Moonwort with a Stock-gilliflower-leaf, and a large oblong Pod.

5. LUNARIA *fruticoſa perennis incana, leucoii folio. Tourn.* Shrubby perennial Moonwort, with a Stock-gilliflower-leaf.

6. LUNARIA *Orientalis, leucoii folio incano, lutea patula. Juſſieu.* Yellow ſpreading *Eaſtern* Moonwort, with a Stock-gilliflower-leaf.

7. LUNARIA *perennis lutea, folio leucoii, ramis expanſis. Vail.* Branching yellow perennial Moonwort, with a Stock-gilliflower-leaf.

There are ſome other Varieties of this Plant, which are preſerved in curious Botanic Gardens: but thoſe here mentioned are the beſt worth cultivating, for their Beauty.

The firſt of theſe Plants is very common in moſt old Gardens in *England*, and is generally known by the Name of Honeſty, or White Sattin: it requires very little Culture, and ſhould be ſown ſoon after the Seeds are ripe in Autumn, upon a Bed or Border of common Earth, in almoſt any Situation (provided it be not under the Dripping of Trees), in which Place they ſhould be ſuffered to remain; for they ſeldom thrive well, if tranſplanted; and in *May* following they will produce Flowers, and the Seeds will ripen in *Auguſt*. The Seed-veſſels of this Plant, when they are full ripe, become very tranſparent, and of the Appearance of white Sattin, at which time the Branches are cut off, and dry'd; after which, they are preſerved to place in the Chimneys of Halls, and large Rooms, where they appear very agreeable.

The other Sorts may be all propagated in the ſame manner as the former, with this Difference; *viz.* That as they are ſomewhat tenderer, ſo they ſhould have a warmer Situation, otherwiſe they are ſubject to be deſtroyed in very cold Winters: they ſhould alſo have a dry Soil, which ſhould be freſh, but not dunged; for if the Soil be too rank, they often canker and decay, eſpecially in wet Seaſons.

Theſe Plants are all of them pretty Varieties in large Gardens, where there is room; but they are ſeldom cultivated in ſmall Places, eſpecially the two firſt Sorts, which grow pretty large, and take up too much room. Their Flowers are not very beautiful: but for the Oddneſs of their Seed-veſſels, as alſo the different Appearances of the Plants, they may be admitted.

The third, fifth, and ſixth Sorts are perennial Plants, which may be propagated by planting Cuttings of any of them in the Summer-months, in a ſhady Border of freſh light Earth, obſerving to water them until they have taken Root; after which, they may be removed into the Places where they are to remain, and muſt be treated as thoſe Plants which were raiſed from Seeds.

LUPINUS, Lupine.

The *Characters* are;

It hath a papilionaceous Flower, out of whoſe Empalement riſes the Pointal, which afterward turns into a Pod, that is filled with either plain or ſpherical Seeds: to which *may be added, The Leaves grow like Fingers upon the Foot-ſtalks.*

The *Species* are;

1. **Lupinus** *ſylveſtris, purpureo flore, ſemine rotundo vario. J. B.* Wild Lupine, with a purple Flower, and round variegated Seed, commonly called the leſſer blue Lupine.

2. **Lupinus** *anguſtifolius cæruleus elatior. Raii Hiſt.* Narrow-leav'd taller blue Lupine.

3. **Lupinus** *ſylveſtris, flore luteo. C. B. P.* The common yellow Lupine.

4. **Lupinus** *peregrinus major, vel villoſus cæruleus major. C. B. P.* Foreign greater hairy Lupine, with a large blue Flower, commonly called the great blue Lupine.

5. **Lupinus** *peregrinus major, flore incarnato. H. L.* Foreign greater Lupine, with a fleſh-coloured Flower, commonly call'd the Roſe Lupine.

6 **Lupinus** *ſativus, flore albo. C. B. P.* Garden or Manured Lupine, with a white Flower.

7. **Lupinus** *cæruleus minor perennis Virginianus repens. Mor. Hiſt.* Smaller perennial creeping blue Lupine of *Virginia.*

There are ſeveral other Varieties of this Plant, which are preſerved in ſome curious Botanic Gardens, that differ chiefly in the Colour and Size of their Flowers and Fruit; but thoſe here mentioned are ſuch as generally are preferred for the Beauty of their Flowers, for which alone they are propagated in the *Engliſh* Gardens.

The firſt Sort is very common in every Garden, being ſown in the Borders of the Flower-garden, with other hardy Kinds of annual Plants, which do not require the Aſſiſtance of an Hot-bed to bring them forward. The Seeds of this, and the common yellow and white Lupines, are very frequent at every Seed-ſhop, where they are generally ſold at a very reaſonable Price. Theſe Seeds may be ſown in *April, May,* and *June,* in order to continue a Succeſſion of their Flowers thro' the Summer. They muſt be ſown where they are to remain; for they ſeldom do well if tranſplanted. They love a light Soil, not too rich or moiſt; in both which they are very ſubject to rot before they perfect their Seeds.

Theſe produce their Flowers ſucceſſively in *June, July,* and *Auguſt,* according to the time of their being ſown; and commonly grow about two Feet high: ſo that if they are rightly diſpoſed amongſt other annual Plants of the ſame Growth in Borders, they make an agreeable Variety. The Seeds of theſe Plants ſhould always be ſown in dry Weather; for if there ſhould happen to be much Wet ſoon after they are put into the Ground, it commonly rots them. The blue and white Sorts have no Scent; but the yellow has a very agreeable Odour, for which it is commonly preferr'd by moſt People to the others.

The narrow-leav'd tall blue Lupine is not ſo common in *England* as the other Sorts; tho' in *Italy* and *Spain* it is one of the moſt common: in the former of which Places it is ſown to improve the Ground which is deſign'd for Vineyards; where, when the Lupines are in Flower, they cut them down, and plow them into the Ground as Manure; or, if they have not time enough to do this, they parboil the Seeds, to prevent their growing, and ſow them upon the Ground, allowing ſixteen Buſhels to an Acre, and plow them in: ſo that in theſe Countries it is a valuable Plant.

The fourth and fifth Sorts are not

ſo common as the former. Theſe Plants grow three Feet high, and ſpread out into many Branches, which are furniſh'd with fine Spikes of large Flowers, which make an handſome Appearance, and continue a long time in Beauty. The Seeds of theſe Plants ſhould be ſown very early in the Spring, upon a warm dry Border, where they muſt remain to flower; for if they are ſown late, they ſeldom perfect their Seeds with us: therefore the better way is, to ſow them in *Auguſt*, under a warm Wall or Hedge, where the Plants will come up, and endure the Cold of our ordinary Winters very well: and theſe Plants will flower earlier the ſucceeding Summer, and never fail to produce ripe Seeds; whereas thoſe ſown in the Spring very often miſcarry.

By not practiſing this Method, when there happened two or three ſucceeding cold Summers, theſe two Species were almoſt loſt in *England* a few Years ſince.

The ſeventh Sort is an abiding Plant, which grows in great Plenty in *America*; from whence the Seeds have been brought into *England*, where it thrives very well, provided it be ſuffered to remain in the Place where it was ſown; for the Roots of this Plant generally run very deep into the Ground, which by removing are commonly broken; after which the Plant ſeldom does well. This ſhould be ſown on a light dry Soil, in which it will thrive very well, and continue ſeveral Years, producing fine Spikes of blue Flowers: but this Sort creeps ſo much at the Root, as not to produce many Seeds in this Country.

LUPULUS, The Hop.

The *Characters* are;

It hath a creeping Root: the Leaves are rough, angular, and conjugated: the Stalks climb and twiſt about whatever is near them: the Flowers are Male and Female on different Plants: the Male Flowers conſiſt of a Calyx, *divided into five Parts, which ſurrounds the* Stamina, *but has no Petals to the Flower: the Female Plants have their Flowers collected into ſquamoſe Heads, which grow in Bunches: from each of the leafy Scales is produced an horned Ovary, which becomes a ſingle roundiſh Seed.*

The *Species* are;

1. LUPULUS *mas. C.B.P.* The Male Hop, commonly called the wild Hop.

2. LUPULUS *fœmina. C.B.P.* The Female, or manur'd Hop.

Of this laſt Sort, the People who cultivate them reckon three different Varieties; as, firſt, the long and ſquare garlick Hop; the long white Hop; and the oval Hop; all which are indifferently cultivated in *England*: but of the Male Hop there has been no Notice taken of any different Varieties. This Sort grows wild in Hedges in divers Parts of *England*; but is never cultivated, as being of no Uſe.

There being the greateſt Plantation of Hops in *Kent*, that are in any County in *England*, it is very probable, that their Method of planting and ordering them ſhould be the beſt.

As for the Choice of their Hop-grounds, they eſteem the richeſt and ſtrongeſt Grounds as the moſt proper: they chooſe a warm dry Soil, that has a good Depth of hazel Mould; and if it be rocky within two or three Feet of the Surface, the Hops will proſper well; but they will by no means thrive on a ſtiff Clay, or ſpongy wet Land.

If it may be, chooſe a Piece of Meadow or Lay-ground to plant Hops

Hops on, ſuch as has not been till'd or ſown for many Years, or an old decay'd Orchard; for Land that is worn out by long bearing of Corn, will require abundance of Dung, to bring it into any tolerable Condition to bear a Crop of Hops.

The *Kentiſh* Planters accounting new Land beſt for Hops, they plant their Hop-gardens with Apple-trees, at a large Diſtance, and with Cherry-trees between; and when the Land hath done its beſt for Hops, which they reckon it will in about ten Years, the Trees may begin to bear. The Cherry-trees laſt about thirty Years; and by that time the Apple-trees are large, they cut down the Cherry-trees.

The *Eſſex* Planters account a moory Land the propereſt for Hops; tho' there are ſeveral other Sorts of Soil that are eſteemed very good.

Some account that Land that has a roſſelly Top, and a brick earthy Bottom, the beſt: a true Roſſel, or light Land, is what they generally plant in, whether it be white or black.

Perſons ought to be very curious in the Choice of the Plants and Sets, as to the Kind of Hop; for if the Hop-garden be planted with a Mixture of ſeveral Sorts of Hops, that ripen at ſeveral times, it will cauſe a great deal of Trouble, and be a great Detriment to the Owner.

The Sets ought to be procured out of Grounds that are intirely of the ſame Sort you would have; they ſhould be five or ſix Inches long, with three or more Joints or Buds on them, all the old Bind and hollow Part of the Set being cut off.

If there be a Sort of Hop you value, and would increaſe Plants and Sets from, the ſuperfluous Binds may be laid down when the Hops are tied, cutting off the Tops, and burying them in the Hill; or when the Hops are dreſs'd, all the Cuttings may be ſaved, and laid in Rows in a Bed of good Earth; for almoſt every Part will grow, and become a good Set the next Spring.

As to the Seaſons of planting Hops, the *Kentiſh* Planters beſt approve the Months of *October* and *March*, both which ſucceed very well: but the common Sets are not to be had in *October*, unleſs from ſome Ground that is to be digg'd up, and deſtroy'd; and likewiſe there is ſome Danger, that the Sets may be rotted, if the Winter prove very wet: but the moſt uſual time of procuring them is in *March*, when the Hops are cut and dreſs'd.

As to the manner of planting the Sets, you ſhould put five good Sets in every Hole with a Setting-ſtick; one is to be placed in the middle, and the reſt round about, ſloping, the Tops meeting at the Centre: they muſt ſtand even with the Surface of the Ground: let them be preſs'd cloſe with the Hand, and covered with fine Earth; and a Stick ſhould be placed on each Side the Hill, to ſecure it.

A Mixture of Compoſt or Dung being prepared for your Hop-ground, the beſt time for laying it on, if the Weather prove dry, is about *Michaelmas*, that the Wheels of the Dung-cart may not injure the Hops, nor furrow the Ground: if this be not done then, you muſt be obliged to wait till the Froſt has hardened the Ground, ſo that it will bear the Dung-cart: and this is alſo the time to carry on your new Poles, to recruit thoſe that are decayed, and to be cut out every Year.

Thoſe who have but a ſmall Quantity of Dung, uſually content themſelves with laying on about twenty Loads upon an Acre every Year; this they lay only on the Hills, either about *November*, or in the Spring; which laſt ſome account the beſt time, when the Hops are dreſs'd to cover them after they are cut; but if it be done at this time, the Compoſt or Dung ought to be very well rotted and fine.

About the End of *February*, if the Hops were planted the Spring before, or if the Ground be weak, they ought to be dreſs'd in dry Weather; but elſe, if the Ground be ſtrong, and in Perfection, the Middle of *March* will be a good time; and the Latter-end of *March*, if it be apt to produce over-rank Binds, or the Beginning of *April*, may be ſoon enough.

In dreſſing thoſe Hops that have been planted the Year before, you ought to cut off both the dead Tops, and the young Suckers, which have ſprung up from the Sets, and alſo to cover the Stocks with an Hill with fine Earth a Finger's Length in Thickneſs.

About the Middle of *April* the Hops are to be poled, when the Shoots begin to ſprout up; the Poles muſt be ſet to the Hills deep into the Ground, with a ſquare iron Pitcher or Crow, that they may the better endure the Winds: three Poles are ſufficient for one Hill. Theſe ſhould be placed as near the Hills as may be, with their bending Tops turned outward from the Hill, to prevent the Binds from entangling; and a Space between two Poles ought to be left open to the South, to admit the Sun-beams.

If you wait till the Sprouts, or young Binds, are grown to the Length of a Foot, you will be able to make a better Judgment where to place the largeſt Poles; but if you ſtay till they are ſo long as to fall into the Alleys, it will be injurious to them, becauſe they will entangle one with another, and will not claſp about the Pole ſo readily.

If, after the Hops are grown up, you find any of them have been under-poled, taller Poles may be placed near thoſe that are too ſhort, to receive the Binds from them.

Some adviſe, that if the Binds be very ſtrong, and overgrow the Poles very much, you ſtrike off their Heads with a long Switch, to increaſe their branching below.

Toward the Latter-end of *May*, when you have made an End of tying them, the Ground muſt have the Summer Digging: this is done by caſting up with the Spade ſome fine Earth into every Hill; and a Month after this is done, you muſt pare the Alleys with a Shovel, and make the Hills up to a convenient Bigneſs.

When the Hops blow, you ſhould obſerve if there be any wild barren Hills among them, and mark them, by driving a ſharpen'd Stick into every ſuch Hill, that they may be digg'd up, and replanted.

Hops, as well as other Vegetables, are liable to Diſtempers and Diſaſters, and, among the reſt, to the Fen.

About the Middle of *July* Hops begin to blow, and will be ready to gather about *Bartholomew-tide*. A Judgment may be made of their Ripeneſs, by their ſtrong Scent, their Hardneſs, and the browniſh Colour of their Seed.

When by theſe Tokens they appear to be ripe, they muſt be pick'd with all the Expedition poſſible; for if at this time a Storm of Wind ſhould come, it would do them great Damage, by breaking the Branches, and bruiſing and diſcolouring the Hops: and it is very well known, that Hops, being pick'd green and bright, will ſell for a Third-part more than thoſe which are diſcolour'd and brown.

It will be beſt to begin to pick the Hops on the Eaſt or North Side of your Ground, if you can do it conveniently; this will prevent the South-weſt Wind from breaking into the Garden.

When the Poles are drawn up to be pick'd, you muſt take great Care not to cut the Binds too near the Hills, eſpecially when the Hops are green, becauſe it will make the Sap to flow exceſſively.

And if the Poles do not come up without Difficulty, they ſhould be raiſed by a Piece of Wood in the nature of a Lever, having a forked Piece of Iron with Teeth on the Inſide, faſten'd within two Feet of the End.

The Hops muſt be pick'd very clean, *i. e.* free from Leaves and Stalks; and, as there ſhall be Occaſion, two or three times in a Day the Bin muſt be emptied into an Hop-bag made of coarſe Linen-cloth, and carried immediately to the Oaſt or Kiln, in order to be dried: for if they ſhould be long in the Bin or Bag, they will be apt to heat, and be diſcolour'd.

If the Weather be hot, there ſhould no more Poles be drawn than can be pick'd in an Hour; and they ſhould be gathered in fair Weather, if it can be, and when the Hops are dry: this will ſave ſome Expence in Firing, and preſerve their Colour better when they are dried.

The beſt Method of drying Hops is with Charcoal on an Oaſt or Kiln covered with Hair-cloth, of the ſame Form and Faſhion that is uſed for drying Malt. There is no need to give any particular Directions for the making it; ſince every Carpenter or Bricklayer, in thoſe Countries where Hops grow, or Malt is made, knows how to build them.

The Hops muſt be ſpread even upon the Oaſt a Foot thick or more, if the Depth of the Curb will allow it: but Care is to be taken not to overload the Oaſt, if the Hops be green or wet.

The Oaſt ought to be firſt warmed with a Fire before the Hops are laid on; and then an even ſteady Fire muſt be kept under them: it muſt not be too fierce at firſt, leſt it ſcorch the Hops: nor muſt it be ſuffered to ſink or ſlacken, but rather be increaſed till the Hops be nearer dried, leſt the Moiſture or Sweat which the Fire has raiſed, fall back, or diſcolour them. When they have lain about nine Hours, they muſt be turn'd, and in two or three Hours more they may be taken off the Oaſt. It may be known when they are well dried, by the Brittleneſs of the Stalks, and the eaſy falling off of the Hop-leaves.

LUTEOLA, Weld, Would, Yellow-weed, or Dyers-weed.

The *Characters* are;

The Leaves are oblong and intire: it hath an anomalous Flower, conſiſting of many diſſimilar Leaves: the Fruit is globular, hollow, and divided into three Parts.

The *Species* are;

1. LUTEOLA *herba, ſalicis folio. C. B. P.* Common Weld.
2. LUTEOLA *minima, polygalæ folio. D. du Bois. Raii Syn.* Smalleſt Weld, with a Milkwort-leaf.

The firſt of theſe Plants is very common in *England*, growing upon dry Banks, and the Tops of Walls and Buildings, almoſt every-where; but the ſecond Sort is very rare: this was found near *Tunbridge-wells* by *Charles du Bois*, Eſq; ſeveral Years ſince.

The common Weld is accounted a rich Dyers Commodity, and is of great Advantage, conſidering the ſmall Expence of its Culture: it will grow upon the pooreſt Sort of Land, provided it be dry; tho' upon a middling Soil it will grow much larger. The Seeds of this Plant ſhould be ſown the Beginning of *Auguſt*, ſoon after they are ripe; when it will come up with the firſt moiſt Weather, and will grow very ſtrong the ſame Autumn, provided it be ſown by itſelf; for moſt People ſow it with Corn, which is very wrong; for that hinders its Progreſs greatly, and occaſions the Loſs of one whole Year. When the Plants are come up pretty ſtrong, you ſhould hoe them (as is practiſed with Turneps), in order to deſtroy the Weeds, as alſo to cut up the Plants where they grow too thick, which will greatly improve them; and the ſucceeding Spring, if the Ground produces many Weeds, you ſhould give it a ſecond Hoeing in *April*, which will preſerve it clean from Weeds; for, after that, the Weld will grow, and prevent the Weeds from coming to an Head afterward.

You muſt be very cautious in the gathering of it, that the Seed be not over-ripe, ſo as to fall out, and that neither the Stalk nor Seed be under-ripe; becauſe if it be, both will be ſpoil'd. It muſt be pull'd up, and bound in little Handfuls, and ſet to dry, as you do Flax; and then houſe it carefully, that you ſhake not out the Seed, which is eaſily beat out, and ſhould be ſown (as was before directed) ſoon after it is ripe.

This Seed is commonly ſold for about ten Shillings *per* Buſhel, or more; a Gallon of which will ſow an Acre; for it is very ſmall.

There are ſome who recommend the ſowing this Seed in the Spring, mixing it with a Crop of Barley or Oats, and only harrowed in with a Buſh, or roll'd with a Roller. But this is not a good Method: for the Barley or Oats will ſtarve the Weld, and make it very poor: and, many times, the Seeds which are ſown in the Spring do not grow, or not come up, till the Autumn following; whereas that ſown in the Beginning of *Auguſt* rarely fails to come up ſoon after, and will be much ſtronger, and fit to pull the ſucceeding Summer, when the other is always two Years before it is pull'd. The Dyers uſe it for dyeing bright Yellows and Lemon Colours. It is much ſown in *Kent*, eſpecially about *Canterbury*; and often yields from Forty Shillings to ten or twelve Pounds an Acre. This is ſuppoſed to be the Plant which the antient *Britons* dyed themſelves with.

LYCHNIDEA. *Vide* Phlox.

LYCHNIS, Campion.

The *Characters* are;

The Cup of the Flower is whole, and either tubulous or ſwelling, and, for the moſt part, furrow'd: the Flower conſiſts of five Leaves, which expand in form of a Clove gilliflower, and are generally heart-ſhaped: the Ovary, which riſes in the Centre of the Calyx, *becomes a conical Fruit, which is wrapt up in the Flower-cup; and has commonly one Cell, which is filled with Seeds, which are roundiſh, angular, and kidney-ſhaped.*

The *Species* are;

1. LYCHNIS *coronaria Dioſcoridis, ſativa, flore dilute rubente. C. B. P.* Garden or Roſe Campion, with a pale-red Flower.

2. LYCHNIS *coronaria Dioſcoridis, ſativa, flore rubro, velut flammeo, fulgens. C. B. P.* Roſe Campion,

with a flaming red-coloured Flower.

3. LYCHNIS *coronaria ſativa multiplex. C. B. P.* The double Roſe Campion.

4. LYCHNIS *coronaria ſativa Dioſcoridis, flore albo. C. B. P.* The ſingle white Roſe Campion.

5. LYCHNIS *umbellifera montana Helvetica. Zan.* Umbelliferous Mountain Campion of *Helvetia*.

6. LYCHNIS *alba multiplex. C. B. P.* Double white Campion, commonly called the Bachelor's-button.

7. LYCHNIS *purpurea multiplex. C. B. P.* Double red Campion, commonly call'd the double red Bachelor's-button.

8. LYCHNIS *pratenſis, flore laciniato pleno. Mor. Hiſt.* The double Meadow Campion, with a jagged Flower, commonly called the double Ragged-Robin.

9. LYCHNIS *hirſuta, flore coccineo, major, C. B. P.* The ſcarlet Lychnis, Nonſuch, *Jeruſalem* Croſs, or Flower of *Conſtantinople*.

10. LYCHNIS *hirſuta, flore incarnato, major. C. B. P.* Great hairy Campion, with a fleſh-coloured Flower, commonly called the pale Lychnis of *Conſtantinople*.

11. LYCHNIS *Chalcedonica, flore pleno miniato, ſeu aurantiaco. Mor. Hiſt.* The double ſcarlet Lychnis, or Flower of *Conſtantinople*.

12. LYCHNIS *ſeu ſaponaria, flore pleno. Tourn.* Double Soapwort, *vulgo*.

13. LYCHNIS *ſylveſtris, quæ Been album, vulgo. C. B. P.* Wild Campion, Spatling-poppy, or white Behen of the Shops.

14. LYCHNIS *ſylveſtris viſcoſa anguſtifolia rubra. C. B. P.* Red *German* Catchfly.

15. LYCHNIS *ſylveſtris viſcoſa anguſtifolia rubra, flore pleno.* Red *German* Catchfly, with a double Flower.

16. LYCHNIS *Orientalis, bupleuri folio. Tourn. Cor. Eaſtern* Campion, with an Hare's-ear-leaf.

17. LYCHNIS *facie auriculæ urſi. C. B. P.* Campion with the Face of an Auricula.

18. LYCHNIS *maritima ſaxatilis, folio anacampſerotis. T. Cor.* Maritime rocky Campion, with an Orpine-leaf.

19. LYCHNIS *noctiflora anguſtifolia odorata. Tourn.* Night-flowered ſweet-ſcented Campion, with a narrow Leaf.

20. LYCHNIS *fruteſcens myrtifolia, Been albo ſimilis. C. B. P.* Shrubby myrtle-leav'd Campion, like the white Behen.

21. LYCHNIS *ſegetum rubra, foliis perfoliatæ. C. B. P.* Red Corn Campion, with Thorough-wax-leaves.

22. LYCHNIS *ſupina Sicula, calyce ampliſſimo ſtriato. Tourn.* Low *Sicilian* Campion, with a large ſtreak'd Flower-cup.

23. LYCHNIS *ſylveſtris viſcoſa anguſtifolia rubra altera. C. B. P.* Another narrow-leav'd wild Campion, with a viſcous Stalk, and red Flowers.

24. LYCHNIS *viſcoſa purpurea latifolia lævis. C. B. P.* Purple viſcous Campion, with a broad ſmooth Leaf, commonly call'd *Lobel*'s Catchfly.

25. LYCHNIS *viſcoſa alba latifolia lævis. C. B. P.* White flowering broad-leav'd Catchfly.

26. LYCHNIS *hirſuta minor, flore variegato. Tourn.* Small hairy Campion, with a variegated Flower, commonly call'd Dwarf Lychnis.

27. LYCHNIS *Hiſpanica, folio kali, multiflora. Tourn. Spaniſh* many-flower'd Campion, with a Glaſſwort-leaf.

28. Lychnis *Hiſpanica, valerianæ rubræ folio, purpuraſcente flore. Tourn. Spaniſh* Campion, with a red Valerian-leaf, and a purpliſh Flower.

29. Lychnis *ſegetum meridionalium annua hirſuta, floribus rubris, uno verſu diſpoſitis. Mor. Hiſt.* Corn annual hairy Campion, with red Flowers diſpoſed on one Side of the Stalk.

30. Lychnis *ſylveſtris alba, ſpica reflexa. Bot. Monſp.* White wild Campion, with a reflex'd Spike.

The firſt, ſecond, and fourth Sorts are very common in moſt *Engliſh* Gardens: theſe are very hardy Plants, and eaſily propagated either by parting their Roots, or from Seed; if by parting the Roots, it ſhould be done about the Latter-end of *Auguſt*, or the Beginning of *September*, that they may take Root before the cold Weather comes on: they may be planted in any Situation, provided they have a light dry Soil. If you would propagate them from Seeds, they ſhould be ſown in *March*, upon a Bed of freſh light Earth; and in *May* the Plants ſhould be tranſplanted into another Bed of the like freſh Earth, at about ſix Inches Diſtance from each other; obſerving to water and ſhade them until they have taken Root; after which they will require no farther Culture than to keep them clear from Weeds.

At *Michaelmas* following, theſe Plants may be placed into the large Borders of the Pleaſure-garden; where, the Summer following, they will produce their Flowers in *June* and *July*; and ſoon after, their Seeds will ripen; which, if permitted to ſhed on the Ground, will riſe the ſucceeding Spring, without any Care.

Theſe Plants, when intermix'd with others of the like Size, make an agreeable Variety during the Seaſon of Flowering.

The double Roſe Campion is ſomewhat nicer, and requires more Care in its Culture, than any of the former: this never produces any Seeds, and is therefore only to be propagated by parting the Roots; the beſt time for which is in *Auguſt*, when the Heads taken off ſhould be planted on a Bed of freſh light Earth; and if the Seaſon ſhould prove dry, they muſt be water'd and ſhaded until they have taken Root: after which they muſt be kept clear from Weeds; and, during the Winter-Seaſon, they ſhould be ſcreen'd from exceſſive Rains; for too much Moiſture, at that Seaſon, very often rots them. In *March* they may be taken up with a Ball of Earth to their Roots, and tranſplanted either into the Borders of the Flower-garden, or in Pots filled with freſh light Earth, and placed where they may have the morning Sun till Eleven o'Clock; in which Situation they will thrive better than when they have more of the Sun. In dry Weather they muſt be frequently water'd: but you ſhould never let them have too much Wet; for that will canker and rot them, as will alſo a very rich Soil. This Plant commonly grows about two Feet high, and produces a great Number of beautiful red Flowers in *June* and *July*, which continue a long time; for which they are greatly eſteem'd.

The umbelliferous Mountain Campion is nearly akin to the before-mention'd Sorts, but produces its Flowers in an Umbel upon the Top of the Stalks, which are of a bright red Colour, and make a pretty Variety in a Garden: this ſeldom grows above eight or nine Inches high, therefore it ſhould be placed amongſt Flowers of the ſame Growth: it delights in a light freſh undung'd Soil, and ſhady Situation; and may be propagated either from Seeds, which it commonly affords in great Plenty; or from Slips, as the before-mention'd Sorts.

The red and white Bachelor's-button are very hardy Plants, in reſpect to Cold: but if they are ſuffer'd to remain long in a Place unremoved, they are very ſubject to rot and decay. They never produce Seeds; ſo are propagated only by parting of their Roots; which may be done either in *September*, or in the Beginning of *March*: but the former Seaſon is preferable; for they will then be well-rooted in the Ground before the dry Weather of the Spring comes on, whereby they will be out of Danger from that; whereas thoſe planted in the Spring, if the Weather ſhould prove dry ſoon after, will ſtarve, and be very weak, unleſs frequently water'd. Theſe commonly grow above two Feet high, and produce their Flowers in *June* and *July*: they love a freſh loamy Soil, which ſhould not be dung'd; and a Situation to the morning Sun, in which they will thrive better than in a more open Expoſure.

The double Ragged-Robin is alſo increaſed by parting the Roots in Autumn: this Plant muſt have a moiſt Soil, and ſhady Situation, where it will thrive exceedingly: but in an hot dry Soil it ſeldom does well. It produces its Flowers about the ſame time as the former, and is very proper for ſhady cold Borders, where few other Plants will thrive.

The ſingle ſcarlet Lychnis may be either propagated by ſowing the Seeds, or parting the Roots: if from Seeds, it ſhould be ſown on a Bed of light Earth in the Beginning of *March*; and when the Plants are come up pretty ſtrong (which is commonly in *May*), they ſhould be tranſplanted out into Nurſery-beds at about ſix Inches Diſtance each Way, obſerving to water and ſhade them until they have taken Root; after which they will require no farther Care, but only to keep them clear from Weeds until *Michaelmas*; at which time they may be removed into the Borders of the Flower-garden, where the next Summer they will produce very ſtrong Stems of Flowers: but if you would propagate them by parting the Roots, it ſhould be done in *September* (as was directed for the before-mention'd Sorts). This Plant will grow in almoſt any Soil or Situation; but does beſt in a middling loamy Soil, and an open Expoſure.

The double Lychnis or Nonſuch is only propagated by parting the Roots, or planting the Cuttings of its Flower-ſtems; which, if water'd and ſhaded, will take Root very well, and make good Plants. The beſt Seaſon for parting the Roots is in *September*: but for planting the Cuttings, *July* is the moſt proper Seaſon: in doing of this, you ſhould take only the lower Parts of the Flower-ſtems, which generally ſucceed much better than the extreme Parts. The Cuttings ſhould have three Joints, two of which ſhould be placed in the Ground, and the third only left above-ground; from which the Shoot will be produc'd, and make a good Plant: by which Method this beautiful Flower may be propagated much faſter than from the Root alone.

This Plant delights in a freſh light Soil, which is not too dry; where it will produce very ſtrong Stems, and riſe about three Feet high. This flowers in *July*, and, if the Seaſon does not prove very hot, will continue in Beauty a whole Month; for which it is greatly eſteem'd.

The double Sopewort is a Plant of no great Beauty; and, being a very great Runner in Gardens, has been almoſt excluded from all curious Gardens; but as it is a Plant which requires very little Culture, it may be admitted to have a Place in ſome abject Part of the Garden. This is propagated by its running Roots, which ſhould be tranſplanted in *October*, and may be placed in any Soil and Situation; but ſhould never ſtand near any other Plants; for it will over-run and deſtroy them. It may be planted under Trees in large Avenues, *&c.* where it will thrive very well; and in *Auguſt* will produce large Bunches of double Flowers, which are very proper to place in Chimneys, *&c.* or in Baſons among other Flowers, where it will make a fine Appearance; and, were it leſs common, it would be more eſteem'd than it is at preſent.

The Spatling-poppy, or White Behen, is a very common Plant in the Fields, in moſt Parts of *England*, and is rarely cultivated in Gardens; but thoſe who have a mind to preſerve it for medicinal Uſes, may propagate it by ſowing the Seeds in *March*, on a Bed of common Earth; where the Plants will eaſily riſe, and, if kept clear from Weeds, will ſoon overſpread the Ground, and continue for ſeveral Years.

The red *German* Catchflies, both ſingle and double, are eaſily propagated by parting the Roots, which ſhould be done in Autumn; for if it be perform'd in the Spring, the dry Weather, which uſually happens at that Seaſon, greatly retards their Growth; whereby their Flowers are never ſo ſtrong, nor produced in ſuch Plenty, as when they are removed in Autumn. Theſe produce their Flowers in Spikes upon clammy Stalks, which grow about a Foot high, and flower in *April* and *May*: that with ſingle Flowers always is the earlieſt; but the double Sort continues longeſt in Flower.

The ſingle Sort may be propagated by Seeds, which ſhould be ſown in *March*, upon a Bed of light Earth; and when the Plants come up, they ſhould be tranſplanted into Nurſery-beds about ſix Inches aſunder, where they will require no farther Care than to keep them clear from Weeds, and in very dry Weather to give them a little Water: at *Michaelmas* they may be removed where they are deſigned to remain.

The ſingle-flower'd Sort is not near ſo beautiful as the double, and therefore hardly worth propagating, ſince the double is very eaſily multiplied, eſpecially if planted in a moiſt light Soil, in which it will thrive exceedingly, and produce ſtrong Flowers. This Sort is very proper to plant in Pots, to adorn ſmall Court-yards at the time of its Flowering.

The ſixteenth and nineteenth Sorts are pretty Varieties in a Garden; and as they take up but little room, and are not very nice in their Culture, they may have a Place amongſt other Flowers of the ſame Growth. Theſe are propagated by ſowing their Seeds in *March*, upon a Bed of freſh light Earth; and when the Plants are come up, they ſhould be tranſplanted into a Nurſery bed, as the former, and at *Michaelmas* may be removed into the Borders of the Flower-garden, where they are to remain. Theſe Plants commonly grow about two Feet high; but as their Leaves are narrow, and the Flower-ſtems ſtand erect, they take up very little room, and their Roots will continue ſeveral Years, and annually produce large Quantities of Flowers: theſe delight in a freſh light dry Soil.

The ſeventeenth is a biennial Plant, and is only propagated by Seeds, which ſhould be ſown on a Border of freſh light Earth in *March*; and when the Plants are come up, they ſhould be tranſplanted; ſome of which ſhould be planted in Pots filled with the ſame freſh Earth, that they may be removed under Shelter in Winter: for it often happens, in ſevere Winters, that thoſe Plants which are placed in the open Air are deſtroyed; for which Reaſon it is adviſeable to have ſome of the Plants in Shelter to ſecure the Kind.

The other Plants may be planted in a Nurſery-bed, as was directed for the former Kinds, where they may remain until *Michaelmas*; at which time they ſhould be tranſplanted into warm Borders, and in a light dry Soil; where they will endure the Cold of our ordinary Winters very well, and flower very ſtrong the ſucceeding Summer. This Plant commonly grows three Feet high, and is apt to branch out pretty much: therefore ſhould be ſupported by Stakes, otherwiſe the Wind often breaks down the Flower-ſtems before the Seeds are perfected.

The eighteenth Sort is alſo tender: this may be propagated by ſowing the Seeds in the ſame manner as the former; and when the Plants come up, ſome of them ſhould be planted into Pots filled with light freſh undung'd Earth, that they may be ſhelter'd in Winter; and the reſt planted into a Nurſery-bed, which ſhould be prepared of freſh light Earth that has not been dung'd; for Moiſture and Richneſs in the Soil will deſtroy them. In this Place they may remain till *Michaelmas*, then they ſhould be removed into very warm Borders; and if they are placed quite cloſe to the Wall, where it is commonly very dry, they will ſucceed the better; as alſo planted on a dry rubbiſhy Soil; for the Leaves of this Plant are very thick and ſucculent, as are all the Stems, ſo that it is as impatient of Wet as the Sedum or Houſeleek; and I do not certainly know whether this Plant would not bear a greater Share of Cold, if it was planted upon an old Wall or Building, where it might be always dry, and not have too much Nouriſhment from the Ground. The following Summer this Plant will produce its Flowers (which, though they are not very beautiful, yet, for the Oddneſs of the Plant, it may have a Place in a good Garden), and the Seeds generally ripen in *Auguſt*: it may alſo be propagated by planting Cuttings in any of the Summer-months, which will take Root, and may be afterwards managed as the Seedling-plants.

The myrtle-leav'd ſhrubby Campion may be propagated by Seeds, as the former; or increaſed by planting Cuttings in any of the Summer-months, which will ſoon after take Root, and become ſtrong Plants; ſome of which ſhould be planted in Pots, that they may be ſhelter'd in Winter, for fear of being loſt; though they will endure the Cold of our Climate very well, if planted on a dry Soil. There is no great Beauty in this Plant; but it is preſerved for Variety-ſake in ſeveral curious Gardens.

The twenty-ſeventh and twenty-eighth Sorts are abiding Plants, and may be propagated either by Seeds, or parting their Roots, in the manner which has been directed for the Roſe Campion, and other Sorts before-mentioned: they are very hardy, and will grow upon almoſt any Soil or Situation: they produce their Flowers in *June* and *July*, and their Seeds ripen ſoon after.

The other Sorts are all of them annual Plants, which may be eaſily propagated by ſowing their Seeds either in *March* or *Auguſt*, when the Plants will ſoon come up, and may be tranſplanted, while young, into the Places where they are deſign'd to remain; or the Seeds may be ſcatter'd in Patches upon the large Borders of the Flower-garden; and when the Plants are come up, they may be thinn'd, leaving ſome of the ſtrongeſt to flower in the ſame Places; and the other Plants may be removed into other Parts of the Garden.

Thoſe Plants which come up in Autumn will be much larger, and flower earlier and ſtronger, than thoſe ſown in the Spring, and will produce good Seeds; whereas it ſometimes happens in bad Seaſons, that thoſe ſown in the Spring often decay, before their Seeds are perfected; though it is a good Method to ſow at both Seaſons; becauſe hereby there will be a Succeſſion of Flowers, and two Chances for good Seeds.

The Dwarf Lychnis has been by ſome recommended to be ſown for Edgings in large Gardens; but I think it by no means proper for that Purpoſe; for when the Plants grow very cloſe together, they draw up weak, ſo that in hard Rains they are beaten down flat to the Ground, and the Flowers ſeldom continue long in Beauty; ſo that it does not afford any Pleaſure above a Fortnight or three Weeks at moſt, after which it appears very unſightly; for when it is in Seed, the Weight of that forces it down upon the Ground; but when the Plants grow ſingly, they will be much larger and ſtronger, and continue longer in Flower.

The two Sorts of *Lobel's* Catchfly have been long cultivated in Gardens, and the Seeds are commonly ſold at the Seed-ſhops in *London*: theſe grow upright to the Height of ſixteen or eighteen Inches (if ſown in the Autumn; but thoſe which are ſown in the Spring ſeldom grow ſo large): they produce pretty Tufts of Flowers upon the Tops of the Branches in form of an Umbel, which continue a long time in Perfection, and are pretty Ornaments in a large Garden.

The twenty-ſecond Sort ſpreads upon the Ground, and therefore muſt be allowed more room than the former: theſe Plants ſhould be planted two Feet aſunder, otherwiſe they will run into each other (eſpecially ſuch as are ſown in the Autumn); ſo that in wet Weather they are ſubject to rot and decay. This produces a great Number of beautiful red Flowers, which make a very agreeable Appearance during their Seaſon of Flowering.

There are a great Number of Sorts more than I have here mention'd, which are preſerv'd in curious Botanic Gardens for Variety-ſake; but as moſt of them are Plants of little Beauty, I think it needleſs to enumerate them in this Place, ſince thoſe here mentioned are the beſt worth propagating in a Flower-garden.

LYCIUM, Box-thorn, *vulgo*.

The *Characters* are;

The Flower is funnel-ſhaped, having an incurved Tube, which is ſpread open at the Top, where it is ſlightly cut into five Parts: in the Centre of the Flower is ſituated the Pointal; attended by five ſhort Stamina, *each ſupporting an erect Summit: the Pointal afterward becomes a round Berry, divided into three Cells filled with kidney-ſhaped Seeds.*

The *Species* are;

1. LYCIUM *foliis ex lanceolato obverſe ovatis. Lin.* Box-thorn, or Baſtard Jaſmine with oblong Leaves, and a white Bark.

2. LYCIUM *foliis linearibus. Lin. Hort. Cliff.* Box-thorn, or Baſtard Jaſmine, with Roſmary-leaves.

3. LYCIUM *aculeatum humile, foliis linearibus, fructu croceo majore.* Dwarf prickly Box-thorn, or Baſtard Jaſmine, with narrow Leaves.

The firſt Sort grows wild in the South of *France*, in *Spain* and *Italy*, where it riſes with many irregular Stems, to the Height of twelve or fourteen Feet; ſending out many long rambling Branches without Order, ſo as to form Thickets in the ſame manner as the Black-thorn or Sloe does in *England*. This Sort hath been uſually preſerved in Green-houſes in this Country; but of late it has been planted in the open Air, and is found to be hardy enough to reſiſt the Cold of our ordinary Winters in the open Air, being rarely injured but by ſevere Froſt; and if the Branches are killed, the Roots will put out freſh the following Summer. There is little Beauty in this Shrub; ſo it is chiefly preſerved for the ſake of Variety: it may be propagated by laying down the Branches, which in one Year will take Root; or, if Cuttings are planted in the Spring, on a ſhady Border, they will ſoon take Root, ſo that it may be propagated with Eaſe.

The ſecond Sort is ſuppoſed to be a Native of *Africa*; but has been found growing wild in the Kingdom of *Valencia* in *Spain*: this is alſo preſerved in Green-houſes, being ſomewhat tenderer than the former Sort; yet in wild Winters it has remained abroad, in warm ſituations, without Injury. This Sort grows to the Height of fourteen or ſixteen Feet, having ſlender crooked Branches, which are armed with ſtrong Thorns, and garniſhed with narrow Leaves coming out in Cluſters; which abide green throughout the Year: the Flowers are produced the whole Length of the Branches at every Joint, on long ſlender Footſtalks, being crooked, and in Shape of an Horn: theſe are of a dark-purple Colour, and are ſucceeded by Berries, which, when ripe, are of a faint yellow Colour.

It may be propagated by Cuttings, Layers, or from Seeds, which are often ripened well in *England*, eſpecially if the Plants are houſed in Winter; for the Fruit is ſeldom ripe, until late in Autumn; ſo that the Froſt often deſtroys thoſe which are expoſed in the open Air. As this Sort produces its Flowers for ſeveral Months ſucceſſively in Summer, it may merit a Place in thoſe Gardens, where Perſons are Lovers of Variety.

The third Sort is much like the ſecond to Appearance; but it is of humbler Growth, ſeldom riſing more than ſeven or eight Feet high: the Leaves are broader, the Flowers larger, as are the Berries alſo, which are of a Saffron-colour when ripe: this is hardier than either of the former Sorts, and will thrive very well in the open Air in *England*, if it is planted in a warm Situation: it may be propagated in the ſame manner as the other Sorts.

LYCOPERSICON, Love-apples, Wolf's-peach, or Tomatas.

The *Characters* are;

It hath a Flower conſiſting of one Leaf, which expands in a circular Order, as doth that of the Night-ſhade: the Style afterward becomes a roundiſh ſoft fleſhy Fruit which is divided into ſeveral Cells, wherein are contain'd many flat Seeds.

The *Species* are;

1. LYCOPERSICON *Galeni. Ang.* Yellow Love-apple.

2. LYCOPERSICON *Galeni, fructu rubro. Boerh. Ind.* Love-apple with a red Fruit.

3. LYCOPERSICON *fructu ceraſi rubro. Tourn.* Love-apple with a red cherry-ſhaped Fruit.

4. LYCOPERSICON *fructu ceraſi luteo. Tourn.* Love-apple with a yellow cherry-ſhaped Fruit.

5. LYCOPERSICON *fructu ſtriato duro. Tourn.* Love-apple with an hard chanell'd Fruit.

6. LYCOPERSICON *fructu rubro non ſtriato. Inſt. R. H.* Love-apple with a ſmooth red Fruit.

7. LYCOPERSICON *fructu albo. Inſt. R. H.* Love-apple with a white Fruit.

8. LYCOPERSICON *Americanum arboreſcens, ampliſſimis foliis angulatis. Plum. Cat. American* tree-like Love apple, with large angular Leaves.

9. LYCOPERSICON *radice tuberoſa, eſculentum.* The Potato, or *Indian* Batatas.

There are ſome other Varieties of theſe Plants in the Gardens of *Italy* and *Spain*; but thoſe here mention'd are all the Sorts I have obſerv'd in the *Engliſh* Gardens.

The ſeven firſt Sorts are propagated by ſowing their Seeds on a moderate Hot-bed in *March*; and when come up, they ſhould be tranſplanted into another moderate Hot-bed, at about three Inches Diſtance from each other, obſerving to ſhade them until they have taken Root; after which they muſt have frequent Waterings, and a large Share of freſh Air; for if they are too much drawn while young, they ſeldom do well afterward.

In *May* theſe Plants ſhould be tranſplanted either into Pots fill'd rich light Earth, or into the Borders of the Flower-garden, obſerving to water and ſhade them until they have taken Root; and as the Branches are extended, they ſhould be ſupported with Sticks; otherwiſe, when the Fruit begins to grow large, it will preſs them down, and break them.

Thoſe Plants which are placed in Pots, ſhould be often water'd, otherwiſe they will come to little (for they are very thirſty Plants); but when they are planted in a rich moiſt Soil, they will grow to a prodigious Size, and produce large Quantities of Fruit; which in Autumn, when they are ripe, make an odd Figure; but the Plants emit ſo ſtrong an Effluvium, as renders them unfit to ſtand near an Habitation, or any Place that is much frequented; for upon their being bruſh'd by the Cloaths, they ſend forth a very ſtrong diſagreeable Scent.

The *Italians* and *Spaniards* eat theſe Apples, as we do Cucumbers, with Pepper, Oil, and Salt; and ſome eat them ſtew'd in Sawces, *&c.* and in Soups they are now much uſed in *England*, eſpecially the ſecond Sort, which is preferr'd to all the other. This Fruit gives an agreeable Acid to the Soup; though there are ſome Perſons who think them not wholſome, from their great Moiſture and Coldneſs, and that the Nouriſhment they afford muſt be bad. They are call'd by the *Portugueſe* and *Spaniards* Tomatoes. The firſt of theſe Plants is the Sort directed for medicinal Uſe by the College in their Diſpenſatory.

The eighth Sort will riſe to the Height of ſix or eight Feet, and become woody. This Sort is propagated by Seeds, which ſhould be ſown on an Hot-bed in the Spring; and when the Plants are come up about two Inches high, they muſt be tranſplanted into a moderate Hot-bed, obſerving to water and ſhade them until they have taken new Root; after which they ſhould have a large Share of free Air in warm Weather to prevent their drawing up weak. When the Plants have obtain'd a good Share of Strength, they ſhould be carefully taken up with Earth to their Roots, and planted into Pots filled with light rich Earth, and placed in a ſhady Situation until they have taken Root; when they may be removed into a warm Situation, where they may remain abroad in the open Air until the Middle or End of *September*; when they muſt be removed into the Conſervatory, and placed where they may have a moderate Share of Warmth in cold Weather; by which Method the Plants may be preſerv'd through the Winter, and the following Summer they will produce Fruit.

The ninth Sort is the common Potato, of which there are two Varieties; one having a red Root, and a purple Flower; and the other a white Root, and a white Flower: but as theſe are accidental Varieties, I ſhall not make them different.

The common Name of *Potato* ſeems to be only a Corruption of the *Indian* Name *Batatas*. This Plant has been much propagated in *England* within thirty Years paſt; for although it was introduced from *America* about the Year 1623, yet it was but little cultivated till of late; theſe Roots being deſpiſed by the Rich, and deemed only proper Food for the meaner Sort of Perſons; however, they are now eſteemed by moſt People; and the Quantity of them which are cultivated near *London*, I believe, exceeds that of any other Part of *Europe*.

This Plant was always ranged in the Genus of *Solanum*, or Nightſhade, and is now brought under that Title by Dr. *Linnæus*; but as *Lycoperſicon* has been eſtabliſh'd as a diſtinct Genus, on account of the Fruit being divided into ſeveral Cells, by intermediate Partitions, and as the Fruit of this Plant exactly agrees with the Characters of the other Species of this Genus, I have inſerted it here.

This Plant is always propagated by its Roots; for it rarely perfects Seeds in *England*; and if it did, that Method would be more tedious and uncertain; and as the Roots greatly multiply, if planted in a proper Soil, there can be no Occaſion for trying any other Method of Culture. The common Way is, either to plant the ſmall Roots or Off-ſets intire, or to cut the larger Roots into Pieces; preſerving a Bud or Eye to each: but neither of theſe Methods is what I would recommend; for when the ſmaller Off-ſets are planted, they generally produce a greater Number of Roots; but theſe are always ſmall; and the Cuttings of the larger Roots are apt to rot, eſpecially if wet Weather happens ſoon after they are planted: therefore what I would recommend is, to make choice of the faireſt Roots for this Purpoſe, and to allow them a larger Space of Ground, both between the Rows, as alſo in the Rows, Plant from Plant; by which Method, I have obſerved, the Roots have been in general large the following Autumn.

The Soil in which this Plant thrives beſt, is a light ſandy Loam, not too dry, or over-moiſt: this Ground ſhould be well plowed two or three times, in order to break and divide the Parts; and the deeper it is Plowed, the better the Roots will thrive. In the Spring, juſt before the laſt Plowing, there ſhould be a good Quantity of rotten Dung ſpread on the Ground, which ſhould be plowed in the Beginning of *March*, if the Seaſon proves mild, otherwiſe it had better be deferr'd until the Middle or Latter-end of that Month; for if it ſhould prove hard Froſt after the Roots are planted, they may be greatly injured, if not deſtroyed, thereby: but the ſooner they are planted in the Spring, after the Danger of Froſt is over, the better it will be, eſpecially in dry Land. In the laſt Plowing, the Ground ſhould be laid even, and then the Furrows ſhould be drawn at three Feet Diſtance from each other, and about ſeven or eight Inches deep. In the Bottom of this Furrow the Roots ſhould be laid, at about one Foot and an half aſunder; then the Furrow ſhould be covered in with the Earth, and the ſame continued through the whole Field, or Parcel of Land, intended to be planted.

After all is finiſh'd, the Land may remain in the ſame State till near the time when the Shoots are expected to appear above-ground; when the Ground ſhould be well harrowed over both Ways; which will break the Clods, and make the Surface very ſmooth; and by doing of it ſo late, it will deſtroy the young Weeds, which, by this time, will begin to make their Appearance; and this will ſave the Expence of Hoeing, as alſo break the upper Surface of the Ground; which, if much Wet has fallen after the Planting, is often bound into an hard Cruſt, and will retard the Appearance of the Shoots.

As I have allotted the Rows of Potatoes at three Feet Diſtance, it was in order to introduce the Hoe-plough between them, which will greatly improve theſe Roots; for by twice ſtirring and breaking of the Ground between theſe Plants, it will not only deſtroy the Weeds, but alſo looſen the Ground; whereby every Shower of Rain will penetrate the Ground to the Roots, and greatly improve their Growth: but theſe Operations ſhould be performed early in the Seaſon, before the Stems or Branches of the Plants begin to fall, and trail upon the Ground; becauſe, after that, it will be impoſſible to do it without injuring of the Shoots.

If theſe Plowings are carefully performed, it will prevent the Growth of Weeds, till the Haulm of the Plants cover the Ground; ſo that afterward there will be little Danger of Weeds growing ſo as to injure the Crop: but as the Plough can only go between the Rows, it will be neceſſary to make uſe of an Hoe to ſtir the Ground, and deſtroy the Weeds in the Rows between the Plants: and if this is carefully perform'd in dry Weather, after the two Plowings, it will be ſufficient to keep the Ground clean until the Potatoes are fit to take up.

In Places where Dung is ſcarce, many Perſons ſcatter it only in the Furrows, where the Roots are planted; but this is a very poor Method; becauſe, when the Potatoes begin to puſh out their Roots, they are ſoon extended beyond the Width of theſe Furrows, and the new Roots are commonly formed at a Diſtance from the old; ſo will be out of the Reach of this Dung, and conſequently will receive little Benefit from it. And as moſt of the Farmers covet to have a Crop of Wheat after the Potatoes are taken off the Ground, ſo the Land will not be ſo thoroughly dreſſed in every Part, nor ſo proper for this Crop, as when the Dung is equally ſpread, and plowed in, all over the Land; nor will the Crop of Potatoes be ſo good. I have always

ways obſerved, where this Method of planting the Potatoes has been practiſed, the Land has produced a fine Crop of Wheat afterward, and there has ſcarce one Shoot of the Potato appeared among the Wheat; which I attribute to the Farmers planting only the largeſt Roots; for when they have forked them out of the Ground the following Autumn, there have been ſix, eight, or ten large Roots produced from each, and often many more, and ſcarce any very ſmall Roots; whereas, in ſuch Places where the ſmall Roots have been planted, there has been a vaſt Number of very ſmall Roots produced; many of which were ſo ſmall, as not to be diſcovered when the Roots were taken up; ſo have grown the following Seaſon, and have greatly injured whatever Crop was on the Ground.

The Haulm of theſe Potatoes is generally killed by the firſt Froſt in the Autumn; when the Roots ſhould be taken up ſoon after, and may be laid up in Sand in any ſhelter'd Place, where they may be kept dry, and ſecure from Froſt. Indeed the People who cultivate theſe Roots near *London*, do not wait for the decaying of the Haulm, but begin to take up Part of them as ſoon as their Roots are grown to a proper Size for the Market; and ſo keep taking up from time to time, as they have Vent for them. There are others likewiſe, who do not take them up ſo ſoon as the Haulm decays, but let them remain much longer in the Ground: in which there is no Hurt done, provided they are taken up before hard Froſt ſets in, which would deſtroy them, unleſs where the Ground is wanted for other Crops; in which Caſe, the ſooner they are taken up, the better, after the Haulm is decayed. When theſe Roots are laid up, they ſhould have a good Quantity of Sand, or dry Earth, laid between them, to prevent their heating; nor ſhould they be laid in too large Heaps, for the ſame Reaſon.

LYCOPUS, Water-horehound.

This Plant grows in great Plenty on moiſt Soils by the Sides of Ditches, in moſt Parts of *England*; but is never cultivated in Gardens; ſo that it would be needleſs to ſay any thing more of it in this Place.

LYSIMACHIA, Looſe-ſtriſe.

The *Characters* are;

The Leaves (which are intire and oblong) are produced ſometimes by Pairs, or three or four at each Joint of the Stalk: the Flower conſiſts of one Leaf, which expands in a circular Order, and is cut into ſeveral Segments at the Top: the Fruit is globular, and opens at the Top, incloſing many Seeds fixed to the Placenta.

The *Species* are;

1. LYSIMACHIA *lutea major, quæ Dioſcoridis. C. B. P.* Common yellow Looſe-ſtriſe or Willow-herb.

2. LYSIMACHIA *lutea major, quæ Dioſcoridis, foliis quaternis. C. B. P.* Greater yellow Looſe-ſtriſe or Willow-herb, with four Leaves at each Joint.

3. LYSIMACHIA *bifolia, flore luteo globoſo. C. B. P.* Looſe-ſtriſe with two Leaves growing at each Joint, and yellow Flowers growing in round Heads.

4. LYSIMACHIA *Orientalis anguſtifolia, flore purpureo. T. Cor.* Narrow-leav'd Eaſtern Looſe-ſtriſe, with a purple Flower.

5. LYSIMACHIA *Hiſpanica ſpicata, ſalicis folio, flore albo. Inſt. R. H.* *Spaniſh* Looſe-ſtriſe, with white Flowers growing in Spikes.

The firſt of theſe Plants is pretty common by Ditch-ſides in many Parts of *England*, and is ſeldom cultivated

tivated in Gardens, though it is not a very deſpicable Plant; for it produces large Tufts of fine yellow Flowers in *July*: for which Reaſon it may be admitted into a cold wet Part of the Garden, where few others will thrive; whereby many a Spot of Ground may be render'd agreeable, which often produces little but groſs Weeds. This Plant may be taken up in the Autumn, from the native Places of its Growth, and tranſplanted where you intend it ſhould grow; and it will ſoon increaſe, by its creeping Roots, to what Quantity you pleaſe; for it is too apt to ramble in a Garden. This Plant is order'd in the College Diſpenſatory for medicinal Uſe.

The ſecond Sort is not a Native of our Country; but when tranſplanted hither, thrives equally with the former. This loves a moiſt rich Soil; and for Variety may be admitted into a Garden.

The third Sort is found in the North of *England* in great Plenty. This Plant is not very proper for a Garden; for the Roots ſpreading very far under-ground, will overrun whatever Plants ſtand near it; nor are the Flowers of any Beauty.

The fourth Sort is a biennial Plant, which produces fine Spikes of ſmall purple Flowers in *June*, and the Seeds are ripe in *Auguſt*.

This Plant may be propagated by ſowing the Seeds, ſoon after they are ripe (for if they are kept until the Spring, they ſeldom grow), upon a warm Border of light Earth; and when the Plants are come up, they ſhould be tranſplanted into a Border of ſtrong Earth, where they may have the morning Sun; in which Place they ſhould remain to flower; for it is a Plant that does not care to be often remov'd.

The fifth Sort is an abiding Plant, which may be propagated by parting its Roots. The beſt Seaſon for this Work is at *Michaelmas*, when the Leaves begin to decay. It ſhould be planted in a moiſt Soil, and a ſhady Situation, or muſt be often water'd, otherwiſe it will not produce large Spikes of Flowers. It may alſo be propagated by ſowing the Seeds in the ſame manner as the former: but thoſe Plants which riſe from Seeds ſeldom flower until the ſecond Year; whereas thoſe propagated from Off-ſets will flower the ſucceeding Year. Theſe produce their Flowers in *July*; and their Seeds ripen in *September*.

LYSIMACHIA GALERICULATA. *Vide* Scutellaria.

LYSIMACHIA NON PAPPOSA. *Vide* Onagra.

LYSIMACHIA SILIQUOSA. *Vide* Epilobium.

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MACALEB. *Vide* Ceraſus.

MADDER. *Vide* Rubia Tinctorum.

MAGNOLIA, The laurel-leav'd Tulip-tree, *vulgo*.

Although I have continued this Title to the Genus, yet I am far from thinking the Plants here mention'd to be of the ſame Genus with that which Father *Plumier* has given this Title to: for the Seeds of his are but few in Number, and thoſe are lodged within the Fruit; whereas the Seeds of theſe are many, and are each lodged in a ſeparate Cell on the Outſide of the Fruit; and, when ripe, hang down by a ſlender Thread.

The *Characters* are;

The Flower hath no Empalement, but is compoſed of an uncertain Number of Petals, which expand in a circular Order; and greatly reſembles the Flower of the Water-lily; having a great Number of Stamina *cloſely embracing the conical Pointal, which is ſituated in the Centre of the Flower: the Pointal afterward becomes a conical Fruit, having many ſcaly Protuberances, each being a Cell including a large flattiſh Seed, which, when ripe, fall out, and are ſuſpended by Threads.*

The *Species* are;

1. Magnolia *lauri folio ſubtus albicante. Cateſb.* The leſſer laurel-leav'd Tulip-tree, or ſweet-flowering Bay.

2. Magnolia *altiſſima, lauroceraſi folio ampliſſimo, flore ingenti candido. Cateſb. Hiſt. Nat. Car.* Commonly call'd the laurel leav'd Tulip-tree, or *Carolina* Laurel.

3. Magnolia *flore albo, folio majore acuminato haud albicante. Cateſb. Hiſt.* Magnolia with a large-pointed Leaf, and a white Flower.

4. Magnolia *ampliſſimo flore albo, fructu coccineo. Cateſb. Hiſt. Vol.* 2. *p.* 80. The Umbrella-tree.

The firſt Sort grows pretty common in *Virginia* and *Carolina*, and is found in moiſt Places, near Brooks: this uſually grows about fifteen or ſixteen Feet high, with a ſlender Stem. The Wood is white and ſpongy; the Bark is ſmooth and white; the Branches are garniſhed with thick ſmooth Leaves, reſembling thoſe of the Bay; but are of an oval Shape, and ſmooth on their Edges: theſe are white underneath. The Flowers are produced in *May*, at the Extremity of the Branches, which are white, and compoſed of ſix Petals, which are concave; theſe have an agreeable ſweet Scent. After theſe are paſt, the Fruit increaſes in Size to be as large as a Walnut with its Cover; but of a conical Shape, having many Cells round the Outſide, in each of which is lodged a flat Seed, about the Size of a Kidney-bean. This Fruit is at firſt green, afterward red, and, when ripe, of a brown Colour. The Seeds, when ripe, are diſcharged from their Cells, and hang by a ſlender Thread.

In the natural Places of its Growth, there is a Succeſſion of the Flowers on the Trees, for two Months; during which time the Woods are perfumed with them: but all thoſe Trees which have produced Flowers in *England*, ſeldom have more than twelve or fourteen Flowers upon each, which are of ſhort Duration, and are not ſucceeded by others: the Leaves of this Sort fall off in Winter.

When theſe Trees are tranſplanted from the Places of their Growth into dry Ground, they make handſomer Trees, and produce a greater Number of Flowers: this is to be underſtood of *America*; for in *Europe* they do not thrive ſo well in a dry Soil, as in a moiſt loamy Land. The greateſt Number of theſe Trees, which are now growing in *England*, are at his Grace the Duke of *Richmond*'s, at *Goodwood* in *Suſſex*.

The ſecond Sort grows in *Florida*, and *South-Carolina*, where it riſes to the Height of eighty Feet or more, with a ſtrait Trunk upward of two Feet Diameter, having a regular Head: the Leaves of this Tree reſemble thoſe of the common Laurel; but are much larger, and are of a Shining-green on their Upper-ſide, and of a Ruſſet or Buff-colour on their Under-ſide: theſe Leaves continue all the Year; ſo that this is one of the moſt beautiful evergreen Trees yet known. Theſe Trees in their native Places of Growth begin to produce their Flowers in *May*, and continue a long time in Flower; ſo that the Woods are perfumed with their Odour for a long time: but thoſe which have flowered in *England*, ſeldom begin till the Middle of *June*, and do not continue long in Beauty. The largeſt Tree of this Kind, which I have met with in *England*, is in the Garden of Sir *John Colliton*, of *Exmouth* in *Devonſhire*; which has produced Flowers for ſeveral Years: there are alſo many pretty large Plants of this Sort in the Gardens of his Grace the Duke of *Richmond*, at *Goodwood* in *Suſſex*, one of which has produced Flowers the two laſt Years: and in the Nurſery of Mr. *Chriſtopher Gray*, near *Fulham*, there is one very handſome Plant, which has alſo produced Flowers.

As this Sort is a Native of a warm Country, ſo it is a little impatient of Cold, eſpecially while young; therefore the Plants ſhould be kept in Pots, and ſheltered in Winter for ſome Years, until they have acquired Strength; when they may be ſhaken out of the Pots, and planted in the full Ground; but they muſt be planted in a warm Situation, where they may be defended from the ſtrong Winds, and ſcreened from the North and Eaſt, otherwiſe they will not live abroad.

There were a great Number of young Plants in *England* before the Year 1739; but a great Part of them were deſtroyed by that ſevere Winter; and ſince then, there have been few good Seeds ſent to *England*; ſo that there are very few of theſe to be purchaſed at preſent; and as almoſt every Perſon who is curious in Gardening is deſirous to have ſome of theſe beautiful Trees in their Gardens, ſo the Demand for them of late has greatly increaſed their Value. If this Tree can be ſo far naturalized as to endure the Cold of our ſevere Winters abroad, it will be one of the greateſt Ornaments to our Gardens: and this we may hope will in time be effected, by diligent Obſervation and Care: for the time when theſe Plants ſuffer moſt, is in Autumn, by the early Froſts; for the Extremity of the Shoots being tender, as they are then growing freely, a ſmall Froſt will pinch them, and afterward the whole Shoot frequently decays; ſo that the Plants ſhould be guarded againſt this, by covering their Tops with Mats, until the Shoots are hardened: after which time they will not be in ſo much Danger of ſuffering; for I have conſtantly obſerved, that if theſe Plants eſcape the early Froſts of the Autumn, they are ſeldom injured afterward: in the ſevere Winter, in the Year 1739-40. I had a pretty large Plant growing in the open Air, which was killed down by the Froſt, and I ſuppoſed was intirely deſtroyed, as there was not the leaſt Appearance of Life in the Stem; ſo that after *Midſummer* I cut it down to the Ground; but left the Root remaining, which, to my great Surprize, ſhot up again the Year after. This I mention to caution People from being too haſty in deſtroying Plants after hard Froſt, but to have them wait until there can be no Hopes of their Recovery.

The fourth Sort grows in *Carolina* pretty frequent; but in *Virginia* it is pretty rare: this uſually grows from ſixteen to twenty Feet high, with a ſlender Trunk: the Wood is ſoft and ſpongy: the Leaves of this Tree are remarkably large, and are produced in horizontal Circles, ſomewhat reſembling an Umbrella; from whence the Inhabitants of thoſe Countries have given it this Name. The Flowers are compoſed of ten or eleven white Petals, which hang down without any Order: the Fruit is very like that of the former Sort: the Leaves of this Sort drop off at the Beginning of Winter.

This Tree is as yet very rare in *Europe*; but as it is propagated from Seeds, we may hope to have it in greater Plenty ſoon, if we can obtain good Seeds from *Carolina*; for it is rarely met with in *Virginia*.

The third Sort is alſo very rare in *England:* there are but few of the Plants at preſent here; nor is it very common in any of the habitable Parts of *America:* ſome of theſe Trees have been diſcovered by Mr. *John Bartram*, growing on the North Branch of *Suſquehannah* River: the Leaves of this Tree are near eight Inches long, and five broad, ending in a Point; the Flowers come out early in the Spring, which are compoſed of twelve white Petals, and are ſhaped like thoſe of the ſecond Sort: the Fruit of this Tree is longer than thoſe of the other Species; but in other reſpects agrees with them

All theſe Sorts are propagated by Seeds, which muſt be procured from the Places of their natural Growth: theſe ſhould be put up in Sand, and ſent over to *England*, as ſoon as poſſible: for if they are kept long out of the Ground, they very rarely grow; therefore the Seeds ſhould be ſown as ſoon as poſſible, when they arrive here.

Some Years paſt I received a good Quantity of theſe Seeds from *Carolina*, which I ſowed in Pots as ſoon as I received them, and plunged the Pots into a moderate Hot-bed: and with this Management I raiſed a great Number of Plants: but from the Seeds which have been lately brought over, there have been but few Plants produced: whether the Seeds were not perfectly ripe when they were gathered, or from what other Cauſe this has happened, I can't ſay; but it is certain the Fault muſt be in the Seeds, becauſe they were differently ſown and managed by the ſeveral Perſons who received them; and the Succeſs was nearly alike every-where.

There have been ſeveral Plants of the firſt and ſecond Sorts raiſed from Layers: but theſe do not thrive ſo well as thoſe which come from Seeds, nor will they grow to near the Size of thoſe; ſo that it is much the beſt way to procure their Seeds from *America*, and propagate them that way: when the Plants are obtained, there is little Difficulty in their Culture, more than that of obſerving to remove them early under Shelter, if there is any Appearance of Froſt; and to ſupply the Plants duly with Water in the Summer ſeaſon: in Winter they ſhould have as much free Air as poſſible, in mild Weather, and be only ſcreened from hard Froſt.

If the Plants make good Progreſs, they will be ſtrong enough to plant in the full Ground in about ſix or ſeven Years. The time for removeing or ſhifting theſe Plants is in *March*, before they begin to ſhoot; which may ſometimes happen to be too ſoon to turn them out of the Pots into the full Ground, eſpecially if the Seaſon proves late: but as there will be no Danger in removing them out of the Pots, the Ball of Earth being preſerved to their Roots; ſo it is beſt to defer this till the Month of *April:* but it will be neceſſary to harden thoſe Plants which are intended

tended to be planted out, by expoſing them to the Air as much as poſſible; for this will keep the Plants backward, and prevent their ſhooting; for if they make Shoots in the Green-houſe, thoſe will be too tender to bear the Sun, until they are by degrees hardened to it; and the leaſt Froſt will greatly pinch them; and ſuch often happen very late in the Spring.

The two or three Winters after theſe are planted out, it will be neceſſary to lay ſome Mulch on the Surface of the Ground about their Roots, as alſo to throw ſome Mats over their Heads, eſpecially at the Beginning of the morning Froſts in Autumn, for the Reaſons before given: but they ſhould never be too cloſely covered up, leſt the Shoots ſhould grow mouldy; for that will certainly kill the leading Buds of every Shoot, and prove to the full as injurious to them as the Froſt. As the Plants get Strength, ſo they will be better able to endure the Cold of our Climate; tho' it will be proper to lay ſome Mulch about their Roots every Winter, in very ſevere Froſt, as alſo to cover their Heads and Stems.

It is the ſecond Sort which requires the moſt Care, being much tenderer than any of the other Sorts; for they will endure the Cold very well, without much Care, after they have acquired Strength.

MAHALEB. *Vide* Ceraſus.

MAJORANA, Marjoram.

The *Characters* are;

It is a verticillate Plant, whoſe Flower is compoſed of one Leaf: the Galea, *or Creſt, is upright, roundiſh, and divided into two Parts: the* Barba, *or Beard, is cut into three Segments, ſo as to appear almoſt like a quinquefid Flower: the Flowers are collected into a ſhort thick round Head, and come out of a fourfold Order of Leaves, which are placed like Scales or Plates.*

The *Species* are;

1. Majorana *vulgaris. C. B. P.* Common ſweet Marjoram.

2. Majorana *rotundifolia ſcutellata exotica. H. R. Par.* Round-leav'd Exotic Marjoram, with a Leaf ſhaped like a Sawcer.

3. Majorana *Cretica, origani folio villoſo, ſatureiæ odore, corymbis majoribus albis.* Hairy *Candia* Marjoram, with an Origany-leaf, a Savory-ſmell, and large round tufted white Heads.

The firſt of theſe Plants is an Annual, and muſt be ſown every Year: the Seeds of this are annually brought from *Marſeilles*, and other Places in the South of *France*, where it grows ſpontaneouſly; for it never ripens Seeds in this Country. The Seeds of this Plant ſhould be ſown the Latter-end of *March*, or the Beginning of *April*, upon a dry warm Spot of Ground: and when the Plants come up, they muſt be carefully clear'd from Weeds, which, if permitted to grow, will ſoon over-run and deſtroy them; and in very dry Weather the Beds ſhould be often watered, which will greatly promote the Growth of them.

In *June* theſe Plants will be pretty ſtrong; at which time you ſhould prepare ſome Beds of light rich Earth, into which you ſhould tranſplant ſuch of the Plants as require to be drawn out, where they come up too thick, at about four Inches Diſtance from each other, obſerving to water them, until they have taken Root; after which they will require no farther Care, but only to clear them from Weeds; and theſe Plants will grow ſtrong, and produce a greater Number of Heads, or Knots, as they are commonly called, than thoſe which remain'd in the Seed-beds unremoved; for which it is much preſerr'd to it in the Markets, where it is called Knotted Marjoram, to diſtinguiſh it from that which is not ſo. Toward the Latter-end of *July* theſe Plants will flower, which is the proper Seaſon to pull them up for medicinal Uſe, when they ſhould be hung up in a ſhady Place to dry.

The ſecond Sort is a perennial Plant, which is preſerved by ſome curious Perſons in Pots, and placed in the Green-houſe in Winter. This Sort never produces Seeds with us; but is eaſily propagated by planting Cuttings or Slips, during any of the Summer-months, in a Bed of rich light Earth, obſerving to water and ſhade them until they have taken Root: at *Michaelmas* theſe Plants ſhould be taken up, and planted in Pots filled with rich light Earth; and when they are ſettled, they ſhould be removed into the Green-houſe, placing them near to the Windows, that they may have a good Share of free Air when the Weather is mild: you muſt often refreſh them with Water; but never give them too much at once, for that will rot them. With this Management the Plants may be preſerved freſh thro' the whole Year, and will be in a Condition to gather for Noſegays any Part of the Winter, and have as good a Scent as the ſweet Marjoram.

The third Sort was ſent into *England* by Sir *George Wheeler* from *Smyrna*, where it grows in great Plenty. This Plant riſes to the Height of two or three Feet, and becomes woody, but never produces any Seeds with us; tho' it is eaſily propagated by planting Slips or Cuttings in any of the Summer-months, after the manner as was directed for the former Sort; and muſt be houſed in Winter, tho' it muſt not be kept too cloſe; for it only requires to be protected from great Rains and Froſt; but ſhould have as much free Air as poſſible in mild Weather, otherwiſe it is ſubject to draw, and grow very weak.

MALABAR-NUT. *Vide* Adhatoda.

MALA ÆTHIOPICA. *Vide* Lycoperſicon.

MALA ARMENIACA. *Vide* Armeniaca.

MALA COTONEA. *Vide* Cydonia.

MALA INSANA. *Vide* Melongena.

MALACOIDES. *Vide* Malope.

MALLOW. *Vide* Malva.

MALLOW-TREE. *Vide* Althæa.

MALOPE, Baſtard Mallow.

The *Characters* are;

The Flower, which is ſhaped like that of the Mallow, hath a double Empalement, the outer being compoſed of three heart-ſhaped Leaves, and the inner is of one Leaf cut into five Segments: the Flower is of one Leaf, divided into five Parts to the Bottom, where they are joined; but it ſeems to have five Leaves: in the Centre ariſes the Pointal, having a great Number of Stamina *ſurrounding it, which are joined cloſely, and form a ſort of Column: the Pointal afterward becomes a Fruit compoſed of many Cells, which are collected into an Head; in each of which is lodged a ſingle Seed.*

We have but one Sort of this Plant; *viz.*

Malope *foliis ovatis crenatis glabris. Lin. Hort. Cliff.* Baſtard Mallow with oval ſmooth Leaves, which are notched.

This Plant was by Dr. *Tournefort* ſeparated from the Mallow, and made a diſtinct Genus, by the Title of *Malacoides:* but Dr. *Linnæus* has altered the Title to this of *Malope,* being an Enemy to all Names which are compounded of *Oides*.

The whole Plant has greatly the Appearance of the Mallow; but differs from it, in having the Cells collected into a Button, ſomewhat like a Blackberry: the Branches ſpread, and lie flat upon the Ground, extending themſelves a Foot or more each Way: the Flowers are produced ſingly upon long Footſtalks, from the Setting on of the Leaves, which are in Shape and Colour like thoſe of the Mallow.

This is propagated by Seeds, which ſhould be ſown in the Place where they are deſign'd to remain; for they do not tranſplant well: if theſe Seeds are ſown upon a warm Border in *Auguſt*, the Plants will ſtand thro' the Winter, and flower early the following Seaſon; ſo that good Seeds may be obtained; for thoſe which are ſown in the Spring rarely ripen Seeds the ſame Year in *England*: and theſe Plants, being large, are often deſtroyed in Winter: it ſeldom continues longer than two Years; ſo that young Plants ſhould be annually raiſed.

MALPIGHIA, *Barbados* Cherry, *vulgo*.

The *Characters* are;

It hath a ſmall quinquefid Calyx, *which conſiſts of one Leaf having bifid Segments: the Flower conſiſts of five Leaves, which expand in form of a Roſe, having ſeveral* Stamina *collected in form of a Tube: the Ovary in the Bottom of the Flower-cup becomes a globular fleſhy ſoft Fruit, in which is a ſingle Capſule, containing three ſtony winged Nuts.*

The *Species* are;

1. Malpighia *mali Punici facie. Plum. N. G.* Malpighia with the Face of a Pomgranate, commonly called in the *Weſt-Indies Barbados* Cherry.

2. Malpighia *foliis ovato-cordatis ſeſſilibus.* Malpighia with oval heart-ſhaped Leaves growing cloſe to the Branches.

3. Malpighia *anguſtifolia, folio ſubtus ſpinoſo. Plum. Nov. Gen.* 46. Malpighia with a narrow Leaf, having Spines on the Under-ſide.

4. Malpighia *latifolia, folio ſubtus ſpinoſo. Plum. Nov. Gen.* 46. Broad-leav'd Malpighia, with Spines on the Under-ſide of the Leaves.

5. Malpighia *humilis, ilicis cocci-glandiferæ foliis. Plum. Nov. Gen.* 46. Dwarf Malpighia, with Leaves like thoſe of the Kermes Oak.

6. Malpighia *foliis oblongo-ovatis, ramis divaricatis.* The clammy Cherry.

The firſt Sort is commonly cultivated, in the *Weſt-Indies*, for the ſake of its Fruit: this uſually grows to the Height of ſixteen or eighteen Feet, having a ſlender Stem, covered with a brown Bark: the Leaves are produced by Pairs oppoſite to each other; which are broader than thoſe of the Pomgranate, and are of a ſtronger Subſtance, continuing all the Year: the Flowers are produced in Bunches, upon pretty long Footſtalks, which come out at the ſmall Diviſions of the Branches: theſe are compoſed of five Petals, which are of a Roſe-colour, and are joined at their Baſe: theſe Flowers are ſucceeded by red Fruit, ſhaped like thoſe of the ſmall wild Cherry, and of the ſame Size, each having an angular furrow'd Stone, ſurrounded by a thin Pulp, which has an agreeable acid Flavour: the Fruit of this very often ripens in *England*.

The ſecond Sort is of much humbler Growth than the firſt, and branches out near the Ground; ſo that it ſeldom riſes with us above three Feet high: the Leaves are much broader and ſhorter than thoſe of the former, and grow very cloſe to the Branches: this Sort has not as yet flowered in *England*.

The third Sort is known, in the *Weſt-Indies*, by the Name of Cowhage Cherry, or Cow-itch Cherry: I ſuppoſe this was ſo called, from the ſmall *Villi* growing on the Back of the Leaves, which, when touched, will ſting, and be full as troubleſome to the Fleſh as the Cow-itch. This Tree will grow to the Size of the firſt Sort; the Leaves are ſomewhat narrower, and end with a ſharper Point, than thoſe; and are covered on the Under-ſide with ſmall Hairs, which do not appear unleſs to thoſe who ſearch for them. This Sort hath not as yet flowered in *England*.

The fourth Sort differs from the third in having broader Leaves, and the Flowers are ſomewhat larger; but in other reſpects is the ſame, ſo far as has appeared to me.

The fifth Sort is a very low buſhy Shrub, cloathed with Leaves like thoſe of the Holly: the Flowers of this Sort I have not ſeen: the Seeds were gathered by the late Dr. *William Houſtoun*, at the *Havannah*, and ſent to *England*; from which ſeveral Plants were raiſed.

The ſixth Sort grows to be a very large Tree in the Places of its natural Growth, often riſing to fifty Feet high and upward: the Leaves of this Tree are as large as thoſe of the Laurel, and ſhaped ſomewhat like them, but are of a ſofter Texture, and of a pale-green Colour: theſe are placed alternately on the Branches: the Branches of this Tree are produced by Threes, which form a Triangle, and grow almoſt horizontal: this Sort hath not produced Flowers in *England*; but as the Fruit agrees well with thoſe of the other Sorts, I have placed this in the ſame Genus with them.

We have alſo a Variety of the firſt Sort in the *Engliſh* Gardens, which has much broader Leaves; and the Flowers are larger, and of a deeper-red Colour; but as I have not ſeen the Fruit, I cannot determine whether it is a diſtinct Species, or only an accidental Variety. This and the firſt Sort are very ornamental Plants in the Stove, during the Winter-ſeaſon; for they continue in Flower from the middle of *November* till the middle of *March*; and their Flowers are very numerous: the Fruit is commonly ripe in *July*; but as they have very little Fleſh over the Stones, theſe Fruit are not of any Conſideration in thoſe Countries where there are much better Fruit.

As theſe Plants are Natives of the warmeſt Parts of *America*, they will not live thro' the Winter in *England*, unleſs they are preſerved in a warm Stove: but when the Plants have obtained Strength, they may be expoſed in the open Air, in a warm Situation, from the Middle or Latter-end of *June*, till the Beginning of *October*, provided the Weather continues ſo long mild; and the Plants ſo treated will flower much better than thoſe which are conſtantly kept in a Stove.

They are all propagated by Seeds, which muſt be ſown upon a good Hot-bed in the Spring; and when the Plants are fit to tranſplant, they muſt be each put into a ſeparate ſmall Pot filled with rich Earth, and plunged into an Hot-bed of Tanners Bark; and muſt be treated in the ſame manner as hath been directed for other tender Plants of the ſame Country: and for the two firſt Winters, it will be proper to keep them in the Bark-bed in the Stove; but afterward they may be placed upon

Stands in the dry Stove in Winter, where they may be kept in a temperate Warmth, in which they will thrive much better than in a greater Heat: theſe muſt be watered two or three times a Week, when they are placed in the dry Stove; but not in large Quantities.

MALVA, Mallows.

The *Characters* are;

It hath a fibroſe Root: the Leaves are round, or angular: the Flower conſiſts of one Leaf, is of the expanded bell-ſhaped Kind, and cut into five Segments almoſt to the Bottom: from the Centre riſe a pyramidal Tube, for the moſt part loaded with many ſmall Threads or Filaments: from the Centre of the Flower-cup riſes the Pointal in the Tube, which becomes the Fruit, which is flat, round, and ſometimes pointed, wrapt up, for the moſt part, within the Flower-cup, and divided into ſeveral Cells ſo diſpoſed round the Axle, that each little Lodge appears moſt artificially jointed within the correſponding Striæ *or Chanels: the Seed is, many times, ſhaped like a Kidney.*

The *Species* are;

1. MALVA *vulgaris, flore majore, folio ſinuato. J. B.* Common Mallow, with a large Flower.

2. MALVA *ſylveſtris, folio ſinuato, flore albo. Sutherl.* Common Mallow, with a large white Flower.

3. MALVA *Sinenſis erecta, floſculis albis minimis. China* upright Mallow, with ſmall white Flowers.

4. MALVA *foliis criſpis. C. B. P.* The curl'd or furbelow'd Mallow.

5. MALVA *caule erecto, foliis angulatis, floribus laxe verticillatis. Lin. Hort. Cliff.* Eaſtern annual Mallow, with angular Leaves, and Flowers growing in looſe Whorles.

6. MALVA *Orientalis erectior, fore magno ſuave-rubente. T. Cor.* Upright Oriental Mallow, with a large beautiful red Flower.

The firſt of theſe Plants is found wild in moſt Parts of *England*; but is rarely cultivated in Gardens. This is the Sort commonly uſed in Medicine, with which the Markets are ſupplied by the Herb folks, who gather it in the Fields.

The ſecond Sort is a Variety of the firſt, from which it differs in the Colour of the Flower. This is preſerved by ſuch as are curious in collecting great Varieties of Plants: but is rarely cultivated in other Gardens.

The third Sort was formerly ſent from *China* as a Pot-herb, and hath been cultivated in ſome curious Gardens in *England*; tho' it is not likely to obtain here as an eſculent Plant, ſince we have many others which are preferable to it for that Purpoſe. This is an annual Plant, which will propagate itſelf faſt enough, provided it be permitted to ſcatter its Seeds, which ſeldom fail to grow, and are often very troubleſome when they have gotten Poſſeſſion of the Ground.

The fourth Sort is preſerved by ſome curious Perſons, for the Beauty of its Leaves, which are naturally furbelow'd round their Edges. This is an annual Plant, which will riſe four or five Feet high, and propagate itſelf in the ſame manner as the former.

The fifth Sort is more rare than any of the former Plants.

This Sort was diſcovered by Dr. *Tournefort*, in the Iſland of *Candia*; from whence he ſent the Seeds. This is preſerved in Botanic Gardens; but will become a Weed, if ſuffered to ſcatter the Seeds.

The ſixth Sort is an annual Plant, which commonly grows upright to the Height of three or four Feet, and produces great Numbers of beautiful red Flowers; which renders

ders it the beſt worth propagating in large Flower-gardens; where being placed in the Middle of large Borders, it makes a fine Appearance.

The Seeds of theſe Plants ſhould be ſown in *March*, upon a Bed of freſh light Earth; and when they are come up four Inches high, they ſhould be tranſplanted where they are deſign'd to be continued, allowing them a large Diſtance; for if they are planted too cloſe, they do not appear ſo well: but they are beſt when intermixed with other Flowers of the ſame Growth, where they afford an agreeable Variety.

Theſe Seeds may alſo be ſown in *Auguſt*; and the Plants will endure the greateſt Cold of our Climate, if plac'd on a dry Soil, and grow larger, and flower ſooner, than thoſe ſown in the Spring: or if the Seeds are permitted to ſcatter, they will come up as the two former Sorts, and thrive equally as well.

There are ſeveral other Sorts of Mallows, ſome of which are Natives of this Country: but as they are Plants of no great Beauty or Uſe, it is needleſs to mention them in this Place.

MALVA ARBOREA. *Vide* Althæa.

MALVA ROSEA, Roſe Mallow, or Hollyhock.

The *Characters* are;

It hath a large and more expanded Flower than the Mallow, which cloſely adheres to the Stalk; and, in many Species, the Flowers are double, where the Petals occupy the Place of the Style: it is in every reſpect larger than the common Mallow; the Leaves are rougher; and the Plant grows almoſt ſhrubby.

Dr. *Linnæus* has altered the Title of this Genus to *Alcea*, and has joined the *Alcea* of former Authors to the Genus of Mallow; from which he ſeparates this, on account of the outward Empalement being divided into ſix Parts; whereas that of the Mallow is divided but into three; which is the only Diſtinction he makes between them; but as the whole Face of theſe Plants differs from the Mallow, and they have been ſo long ſeparated from that Genus, I ſhall continue this Title of Roſe Mallow to them.

The *Species* are;

1. MALVA ROSEA *ſive hortenſis, flore albo, J. B.* Single white Hollyhock.
2. MALVA ROSEA *hortenſis, flore ſimplici rubro. H. Eyſt.* Single red Hollyhock.
3. MALVA ROSEA, *folio rotundo, flore ex rubro nigricante. C. B. P.* Hollyhock with a blackiſh-red Flower.
4. MALVA ROSEA, *folio ſubrotundo, flore ſimplici luteo. H. R. Par.* Hollyhock with a ſingle yellow Flower.
5. MALVA ROSEA, *folio ſubrotundo, flore pleno albo. C. B. P.* Double white Hollyhock.
6. MALVA ROSEA *hortenſis, flore pleno rubro. H. Eyſt.* Double red Hollyhock.
7. MALVA ROSEA *multiplex, flore incarnato, H. Eyſt.* Hollyhock with a double fleſh colour'd Flower.
8. MALVA ROSEA *hortenſis, flore pleno atro-rubente. H. Eyſt.* Double Hollyhock, with a dark-red Flower.
9. MALVA ROSEA, *folio ſubrotundo, flore pleno puniceo. C. B. P.* Hollyhock with a double ſcarlet Flower.
10. MALVA ROSEA, *folio ſubrotundo, flore pleno ſubluteo. H. R. Par.* Hollyhock with a double yellowiſh Flower.
11. MALVA ROSEA *hortenſis maxima, folio ficus. Inſt. R. H.*

Greater Garden Holly hock, with a Fig-leaf.

There are ſome other Varieties of theſe Plants, which differ in the Colour of their Flowers; but as they are near to one or other of theſe Colours, and are either paler or deeper, none of the Sorts yet known being intirely different in Colour from thoſe here mentioned, ſo it would be needleſs in this Place to inſert all their minute Diſtinctions, eſpecially as they are ſeminal Variations, and ſeldom produce the ſame exact Colours again from Seeds.

Theſe Plants are all propagated from Seeds, which ſhould be ſown upon a Bed of freſh Earth in *April*: and when the Plants are come up pretty ſtrong, they muſt be tranſplanted out into Nurſery-beds at about a Foot Diſtance from each other, obſerving to water them until they have taken Root; after which they will require no farther Care until the *Michaelmas* following, but only to keep them clear from Weeds; at which time they ſhould be tranſplanted into Rows two Feet aſunder; in which Place they may continue until they flower, when you ſhould mark all thoſe with double Flowers, which have good Colours, with Sticks, that they may be tranſplanted into the Borders of large Gardens at *Michaelmas*, where they will remain four or five Years, and produce their Flowers very ſtrong; but when the Roots are much older, they begin to decay, and do not produce their Stems ſo ſtrong, nor are their Flowers ſo large; wherefore there ſhould always be a Supply of young Plants rais'd from Seeds every third or fourth Year, in order to have the Flowers in Perfection: but it is the better way to change the Seeds every three or four Years, with ſome Perſon of Integrity who lives at a conſiderable Diſtance, and is exact to ſave Seeds from none but double Flowers, and ſuch as are well colour'd, by which means you may preſerve the Sorts well from degenerating: but if you conſtantly ſave the Seeds in the ſame Place, they will in a few Years become little worth.

The ſeveral Varieties of theſe Plants, when carefully intermixed in large Wilderneſs-borders or Avenues, afford an agreeable Proſpect during their Seaſon of flowering, which is commonly in *July* and *Auguſt*; but as they grow to a conſiderable Height, and ſpread pretty wide, ſo they take up too much room, and appear unſightly, in ſmall Flower-gardens. They ſhould alſo be ſupported with Stakes, otherwiſe they are ſubject to be broken down by ſtrong Winds.

When the Stalks of theſe Plants begin to decay, they ſhould be cut down pretty cloſe to the Ground, to encourage them to ſhoot out freſh Heads for the ſucceeding Year, otherwiſe they ſometimes rot, and deſtroy the Roots.

MALUS, The Apple-tree.

The *Characters* are;

The Tree groweth very large: the Branches ſpread (and are more depreſſed than thoſe of the Pear-tree): the Flower conſiſts of five Leaves, which expand in form of a Roſe: the Fruit is hollowed about the Footſtalk; is, for the moſt part, roundiſh, and umbilicated at the Top; is fleſhy, and divided into five Cells or Partitions, in each of which is lodg'd one oblong Seed.

Dr. *Linnæus* has joined the Pear, Apple, and Quince, together, making them all of the ſame Genus; and has reduced all the Varieties of each to one Species. The Apple he diſtinguiſhes by the Title of *Pyrus foliis ſerratis, pomis baſi concavis. Hort. Cliff.* i. e. Pear with ſawed Leaves, and the Apple hollow at the Baſe. But where the Fruit is admitted as a diſtinguiſhing Character of the Genus, the Apple ſhould be ſeparated from the Pear: and this Diſtinction is founded in Nature; for theſe Fruits will not take by budding or grafting upon each other, tho' it be performed with the utmoſt Care. Indeed I have ſometimes ſucceeded ſo far as to have the bud or graft ſhoot; but they ſoon decayed, notwithſtanding all poſſible Care was taken of them; therefore I ſhall beg leave to continue the Separation of the Apple from the Pear, as hath been always practiſed by the Botaniſts before his time.

The *Species* are;

1. MALUS *ſylveſtris, acido fructu albo. Tourn.* The Crab-tree.

2. MALUS *ſylveſtris, foliis ex albo eleganter variegatis. Cat. Plant. Hort.* The Crab-tree with ſtrip'd Leaves.

3. MALUS *ſylveſtris Virginiana, floribus odoratis. Cat. Plant. Hort. Virginian* Crab-tree, with ſweet Flowers.

4. MALUS *fructifera, flore fugaci. H. R. Par.* The Fig-apple.

5. MALUS *pumila, quæ potius frutex, quam arbor, fructu rubente & candido. C. B. P.* The Paradiſe-apple.

6. MALUS *ſativa, foliis eleganter variegatis. Cat. Plant. Hort.* Apple-tree with ſtrip'd Leaves.

7. MALUS *flore pleno. C. B. P.* The Apple with a double Flower.

8. MALUS *prægrandis præcox tenerrima. H. R. P. Pomme de Rambour.* The Rambour is a very large Fruit, of a fine Red next the Sun, and ſtriped with a pale or yellowiſh Green. This ripens very early, commonly about the End of *Auguſt*, and ſoon grows mealy; therefore is not eſteemed in *England*.

9. MALUS *ſativa, fructu pediculo fermè carente. Inſt. R. H. Pomme de Courpendu*, The hanging Body. This is a very large Apple, of an oblong Figure, having ſome irregular Riſings or Angles, which run from the Baſe to the Crown: it is of a red Caſt on the Side toward the Sun, but pale on the other Side: the Footſtalk is long and ſlender, ſo that the Fruit is always hanging downward, which occaſioned the *French* Gardeners giving it this Name.

10. MALUS *ſativa, fructu ſubrotundo e viridi palleſcente acido-dulci. Inſt. R. H.* The Renette-blanche, or White-renette, or *French* Renette. This is a large fine Fruit of a roundiſh Figure, and of a pale Green, changing a little yellowiſh when ripe, having ſome ſmall grey Spots: the Juice is ſugary, and it is good for Eating and Baking: it will keep till after *Chriſtmas* ſound.

11. MALUS *ſativa, fructu ſubrotundo e viridi ferrugineo. Inſt. R. H.* The Renette-griſe. This is a middle-ſize Fruit, ſhaped like the Golden-renette, but is of a deep-grey Colour on the Side next the Sun; but on the other Side, intermixed with Yellow: it is a very juicy good Apple, of a quick Flavour: it ripens in *October*, and will not keep long.

12. MALUS *ſativa, fructu ſplendide purpureo. Inſt. R. H. Pomme d'Api.* This is a ſmall hard Fruit, of a bright-purple Colour on the Side next the Sun, and of a yellowiſh-green on the other Side: it is a very firm Fruit, but not much Flavour; ſo is only preſerved by ſome Perſons, by way of Curioſity: it

keeps a long time ſound, and makes a Variety in a Diſh of Fruit.

13. MALUS *ſativa, fructu magno intenſe rubente, violæ odore. Inſt. R. H. Le Calville d'Automne.* The Autumn Calville. This is a large Fruit of an oblong Figure, of a fine red Colour toward the Sun: the Juice is vinous, and is much eſteemed by the *French*.

14. MALUS *ſativa, fructu oblongo e cinereo ferrugineo ſaccharato, aniſi odore. Inſt. R. H. Fenouillet ou Pomme d'Anis.* The Fennel, or Aniſe-apple. This is a middle-ſiz'd Fruit a little longer than a Golden Pippin, of a greyiſh Colour: the Pulp is tender, and has a ſpicy Taſte like Anis-ſeed: the Wood and the Leaves are whitiſh.

15. MALUS *ſativa, fructu partim albide punctato, partim ſtriis intenſe rubris diſtincto. Inſt. R. H. Pomme violette.* The Violet-apple. This is a pretty large Fruit of a pale-green, ſtriped with deep-red to the Sun: the Juice is ſugary, and has a Flavour of Violets, which occaſioned the Name.

The Crab, which is the firſt Sort here mentioned, has been generally eſteemed as the beſt Stock for grafting Apples upon, being very hardy, and of long Duration: but of late Years there have been few Perſons who have been curious enough to raiſe theſe Stocks, having commonly ſown the Kernels of all Sorts of Cyder apples for Stocks without Diſtinction, as theſe are much eaſier to procure than the other; ſo the Gardeners generally call all thoſe Crabs, which are produced from the Kernel, and have not been grafted: but were the Kernels of the Crabs ſown, I ſhould prefer thoſe for Stocks; becauſe they are never ſo luxuriant in their Growth, as thoſe from Apple-kernels; and they will continue longer ſound: beſide, theſe will preſerve ſome of the beſt Sorts of Apples in their true Size, Colour, and Flavour; whereas the other Free-ſtocks produce larger Fruit, which are not ſo well taſted, nor will they keep ſo long.

The Paradiſe-apple hath, of late Years, greatly obtained for Stocks to graft or bud upon; but theſe are not of long Duration; nor will the Trees grafted upon them ever grow to any Size, unleſs they are planted ſo low as that the Cyon may ſtrike Root into the Ground, when it will be equal to no Stock; for the Graft will draw its Nouriſhment from the Ground; ſo that it is only by way of Curioſity, or for very ſmall Gardens, that theſe Stocks are proper, ſince there can never be expected any conſiderable Quantity of Fruit from ſuch Trees.

Theſe Trees have been much more eſteemed in *France*, where they were frequently brought to the Table in the Pots growing with their Fruit upon them: but this being only a Curioſity, it never obtained much in *England*; ſo that the Gardeners do not propagate many of them here at preſent.

There is anothe Apple which is called the *Dutch* Paradiſe-apple, much cultivated in the Nurſeries, for grafting Apples upon, in order to have them Dwarfs: and theſe will not decay or canker as the other, nor do they ſtint the Grafts near ſo much; ſo are generally preferred for planting Eſpaliers or Dwarfs, being eaſily kept within the Compaſs uſually allotted to theſe Trees.

Some Perſons have alſo made uſe of Codlin-ſtocks, to graft Apples upon, in order to make them dwarf; but the Fruit which are upon theſe Stocks are not ſo firm, nor do they laſt ſo long; therefore the Winter-fruits ſhould never be grafted upon theſe.

The *Virginian* Crab-tree, with ſweet Flowers, is preſerved by ſuch Perſons as are curious in collecting great Variety of Trees: it may be propagated by budding or grafting it upon the common Crab or Apple-tree; but it is ſomewhat tender while young: wherefore it ſhould be planted in a warm Situation, otherwiſe it will be ſubject to ſuffer by an extreme hard Winter. The Flowers of this Tree are ſaid to be exceeding ſweet in *Virginia*, where it grows in the Woods in great Plenty; but I could not obſerve much Scent in ſome of them which have flowered in *England*; ſo that I am in doubt whether the Sort at preſent in the Gardens is the very ſame with that of *Virginia*, or perhaps it may have degenerated by ſowing the Seeds, which is the way it was firſt obtain'd in *England*.

The Fig-apple is ſuppos'd by many Perſons to be produc'd without a previous Flower. But this Opinion is rejected by ſome curious Obſervers, who affirm, there is a ſmall Flower precedes the Fruit, which is very fugacious, ſeldom continuing above a Day or two. Now, which of theſe Opinions is the right, I have not, as yet, had an Opportunity to determine, not having a Tree in my own Poſſeſſion which is arriv'd at Maturity to produce Fruit; tho' it might reaſonably be expected, that thoſe who have had Trees of this Kind ſeveral Years, might have determin'd this Point long ere this time.

There is an Account of a Tree of this Kind, mention'd in a Letter from *New-England*, written by *Paul Dudley*, Eſq; to the *Royal Society*, and publiſh'd in the *Philoſophical Tranſactions*, Numb. 385. which was exceeding large, and produc'd great Quantities of Fruit, without any previous Flowers; but it grew at ſome Diſtance from his Habitation, and he having no Opportunity to obſerve it ſtrictly himſelf, but by viſiting the Place two or three times about the Seaſon of Flowering, and not being appris'd of the ſudden Decay of the Flowers, they might eaſily be ſuppos'd to have appear'd, and dropt off, between the times of his viſiting the Place.

The two Sorts with ſtrip'd Leaves are preſerv'd by ſuch as are curious in collecting ſuch Varieties; theſe may be propagated by grafting or budding them upon the common Apple or Crab-tree; but they ſhould not be planted in a very rich Soil, which would cauſe them to grow very free, whereby their Leaves would become intirely green again.

The other Sorts, which are above-mentioned, are what have been introduc'd from *France*; but there are not above two or three of them, which are much eſteemed in *England*; *viz.* the *French* Renette, the Renette-griſe, and the Violet-apple; the other being early Fruit, which do not keep long, and their Fleſh is generally mealy; ſo that they do not deſerve to be propagated, as we have many better Fruits in *England*: but as there may be ſome Perſons, who are willing to have all the Sorts, I have mentioned them here, for their Inſtruction; but I ſhall next put down thoſe Sorts of Apples, which are beſt eſteemed in *England*; placeing them in the Order according to their time of Ripening.

The firſt Apple which is brought to the Markets is, the Codlin: This Fruit is ſo well known in *England*, that it is needleſs to deſcribe it.

The next is the Margaret-apple: This Fruit is not ſo long as the Codlin, of a middling Size: the Side next the Sun changes to a faint Red, when ripe: the other Side is of a pale Green: the Fruit is firm, of a quick pleaſant Taſte; but doth not keep long.

The Summer-pearmain is an oblong Fruit, ſtriped with Red next the Sun: the Fleſh is ſoft, and in a ſhort time is mealy; ſo that it is not greatly eſteemed.

The *Kentiſh* Fill-baſket is a Species of Codlin, of a large Size, and ſomewhat longer ſhaped than the Codlin: this ripens a little later in the Seaſon, and is generally uſed for Baking, *&c.*

The Tranſparent-apple: This was brought to *England* a few Years ſince, and was eſteemed a Curioſity: it came from *Peterſburgh*, where it is affirmed to be ſo tranſparent, as that the Kernels may be perfectly ſeen, when the Apple is held to the Light; but, in this Country, it is a mealy inſipid Fruit; ſo not worth propagating.

Loan's Pearmain: This is a beautiful Fruit, being of a middling Size: the Side next the Sun is of a beautiful Red, and ſtriped with the ſame Colour on the other: the Fleſh is vinous; but as it ſoon grows mealy, it is not greatly eſteemed.

The Quince apple: This is a ſmall Fruit, ſeldom larger than the Golden pippin; but is in Shape like the Quince, eſpecially toward the Stalk: the Side next the Sun is of a ruſſet Colour, on the other Side inclining to yellow: this is an excellent Apple for about three Weeks, in *September*; but it will not keep much longer.

The Golden-rennet is a Fruit ſo well known in *England*, as to need no Deſcription: this ripens about *Michaelmas*, and for about a Month is a very good Fruit, either for Eating raw, or Baking.

The Aromatic-Pippin is alſo a very good Apple: it is about the Size of a Nonpareil, but a little longer; the Side next the Sun is of a bright-ruſſet Colour: the Fleſh is breaking, and hath an aromatic Flavour: it ripens in *October*.

The *Hertfordſhire* Pearmain, by ſome called the Winter-pearmain: This is a good-ſiz'd Fruit, rather long than round, of a fine Red next the Sun, and ſtriped with the ſame Colour on the other Side: the Fleſh is juicy, and ſtews well; but is not eſteemed for eating by any nice Palates: this is fit for Uſe in *November* and *December*.

The *Kentiſh* Pippin is a large handſome Fruit, of an oblong Figure: the Skin is of a pale-green Colour: the Fleſh is breaking, and full of Juice, which is of a quick acid Flavour: this is a very good Kitchen-fruit, and will keep till *February*.

The *Holland* Pippin is larger than the former: the Fruit is ſomewhat longer; the Skin of a darker Green; the Fleſh firm and juicy: this is a very good Kitchen-fruit, and will keep late in the Seaſon.

The Monſtrous-renette is a very large Apple, of an oblong Shape, turning red toward the Sun, but of a Dark-green on the other Side: the Fleſh is apt to be mealy; ſo it is not much valued by thoſe who are Curious; and only preſerved for the Magnitude of the Fruit.

The Embroider'd apple is a pretty large Fruit, ſomewhat ſhaped like the Pearmains; but the Stripes of Red are very broad; from whence the Gardeners have given it this Title: it is a middling Fruit, and is commonly uſed as a Kitchen-apple: tho' there are many better.

The Royal-ruſſet, by ſome called the Leather-coat-ruſſet, on account of the deep-ruſſet Colour of the Skin: This is a large fair Fruit, of an oblong Figure, broad toward the Baſe; the Fleſh is inclineable to yellow: this is one of the beſt Kitchen-apples we have, and is a very great Bearer: the Trees grow large and handſome; and the Fruit is in Uſe from *October* till *April*; and is alſo a pleaſant Fruit to eat.

The *Wheeler*'s Ruſſet is an Apple of a middling Size, flat, and round: the Stalk is ſlender; the Side next the Sun of a light-ruſſet Colour; the other Side inclining to a pale-yellow, when ripe: the Fleſh is firm; and the Juice has a very quick acid Flavour; but it is an excellent Kitchen-fruit, and will keep a long time.

Pile's Ruſſet is not quite ſo large as the former, but is of an oval Figure, of a ruſſet Colour to the Sun, and of a dark-green on the other Side: it is a very firm Fruit, of a ſharp acid Flavour; but is much eſteemed for Baking; and will keep ſound till *April*, or later, if they are well preſerved.

The Nonpareil is a Fruit pretty generally known in *England*; tho' there is another Apple which is frequently ſold in the Markets for it, which is what the *French* call *Hautebonne*: this is a larger fairer Fruit than the Nonpareil, more inclining to yellow: the ruſſet Colour brighter, and is earlier ripe, and ſooner gone: this is not ſo flat as the true Nonpareil, nor is the Juice ſo ſharp; tho' it is a good Apple, in its Seaſon: but the Nonpareil is ſeldom ripe before *Chriſtmas*; and where they are well preſerved, they will keep till *May* perfectly ſound: this is juſtly eſteemed one of the beſt Apples yet known.

The Golden-pippin is a Fruit peculiar to *England*: there are few Countries abroad, where this ſucceeds well; nor do they produce ſo good Fruit in many Parts of *England*, as were to be wiſhed: this is in ſome meaſure owing to their being grafted on Free ſtocks, which inlarges the Fruit, but renders it leſs valuable; becauſe the Fleſh is not ſo firm, nor the Flavour ſo quick; and it is apt to be dry and mealy; therefore this ſhould always be grafted upon the Crab-ſtock, which will not canker like the others; and tho' the Fruit will not be ſo fair to the Sight, yet it will be better flavoured.

There are yet a great Variety of Apples, which, being inferior to thoſe here mentioned, I have omitted; as thoſe which are here enumerated will be ſufficient to furniſh the Table, and the Kitchen, during the whole Seaſon of theſe Fruits; ſo that where theſe Sorts are to be had, no Perſon of Taſte will eat the other.

I ſhall here mention ſome of the Apples which are chiefly preferred for the making of Cyder; tho' there are, in every Cyder Country, new Sorts frequently obtained from the Kernels: but thoſe hereafter mentioned have, for ſome Years been in the greateſt Eſteem:

The Red-ſtreak.
Devonſhire Royal Wilding.
The Whitſour.
Hertfordſhire Under-leaf.
John-apple, or *Deux-annes*.
Everlaſting-hanger.
Gennet-moyle.

All the Sorts of Apples are propagated by grafting or budding, upon the Stocks of the ſame Kind; for they will not take upon any other Sort of Fruit-trees. In the Nurſeries there are three Sorts of Stocks generally uſed, to graft Apples upon: the firſt are called Free-ſtocks: theſe are raiſed from the Kernels of all Sorts of Apples, indifferently; and theſe are alſo termed Crab-ſtocks; for all thoſe Trees which are produced from the Seeds, before they are grafted, are termed Crabs, without any Diſtinction: but, as I before obſerved, I ſhould always prefer ſuch Stocks as are raiſed from the Kernels of Crabs, where they are preſſed for Verjuice: and I find ſeveral of the old Writers on this Subject, of the ſame Mind. Mr. *Auſten*, who wrote an hundred Years ago, ſays, *The Stock which be accounts beſt for Apple-grafts, is the Crab: which is better than ſweeter Apple-trees to graft on, becauſe they are uſually free from Canker, and will become very large Trees; and, I conceive, will laſt longer than Stocks of ſweeter Apples, and will make Fruits more ſtrong and hardy to endure Froſts.* And it is very certain, that by frequently grafting ſome Sorts of Apples upon Free-ſtocks, the Fruits have been rendered leſs firm and poignant, and of ſhorter Duration.

The ſecond Sort of Stock is the *Dutch* Creeper, before-mentioned: theſe are deſigned to ſtint the Growth of the Trees, and keep them within Compaſs for Dwarfs or Eſpaliers.

The third Sort is the Paradiſe-apple; which is a very low Shrub; ſo only proper for Trees which are kept in Pots, by way of Curioſity; for theſe do not continue long.

Some Perſons have made uſe of Codlin-ſtocks for grafting of Apples, in order to ſtint their Growth: but as theſe are commonly propagated by Suckers, I would by no means adviſe the uſing of them; nor would I chooſe to raiſe the Codlin-trees from Suckers, but rather graft them upon Crab-ſtocks; which will cauſe the Fruit to be firmer, laſt longer, and have a ſharper Flavour: and theſe Trees will laſt much longer ſound, and never put out Suckers, as the Codlins always do; which, if not conſtantly taken off, will weaken the Trees, and cauſe them to canker; and it is not only from the Roots, but from the Knots of their Stems, there are generally a great Number of ſtrong Shoots produced, which fill the Trees with uſeleſs Shoots, and render them unſightly, and the Fruit ſmall and crumpled.

The Method of raiſing Stocks from the Kernels of Crabs or Apples is, to procure them where they are preſſed for Verjuice or Cyder; and after they are cleared of the Pulp, they may be ſown upon a Bed of light Earth, covering them over about half an Inch thick with the ſame light Earth. Theſe may be ſown in *November* or *December*, where the Ground is dry; but in wet Ground, it will be better to defer it till *February*: but then the Seeds ſhould be preſerved in dry Sand, and kept out of the Reach of Vermin; for if Mice or Rats can get to them, they will devour the Seeds: there ſhould alſo be Care taken of the Seeds, when they are ſown, to protect them from theſe Vermin, by ſetting of Traps to take them, &c. In the Spring, when the Plants begin to appear, they muſt be carefully weeded; and if the Seaſon ſhould prove dry, it will be of great Service to water them two or three times a Week: and during the Summer, they muſt be conſtantly kept clear from Weeds; which, if ſuffered to grow, will ſoon over-top the Plants, and ſpoil their Growth: if theſe thrive well, they will be fit to tranſplant into the Nurſery the *October* following; at which time the Ground ſhould be carefully digged, and cleanſed from the Roots of all bad Weeds: then the Stocks ſhould be planted in Rows three Feet aſunder, and the Plants one Foot Diſtance in the Rows, cloſing the Earth pretty faſt to their Roots: when the Stocks are tranſplanted out of the Seed-bed, the firſt Autumn after ſowing, they need not be headed; but where they are inclined to ſhoot downward, the Tap-root muſt be ſhortened, in order to force out horizontal Roots: if the Ground is pretty good in which theſe Stocks are planted, and the Weeds conſtantly cleared away, the Stocks will make great Progreſs; ſo that thoſe which are intended for Dwarfs, may be grafted the Spring Twelvemonths after they are planted out of the Seed-bed: but thoſe which are deſigned for Standards will require two Years more Growth, before they will be fit to graft; by which time they will be upward of ſix Feet high. The other neceſſary Work to be obſerved in the Culture of theſe Trees, while they remain in the Nurſery, being exhibited under the Article of *Nurſery*, I ſhall not repeat in this Place.

I ſhall next treat of the manner of planting ſuch of theſe Trees, as are deſigned for Eſpaliers in the Kitchen-garden; where, if there is an Extent of Ground, it will be proper to plant, not only ſuch Sorts as are for the Uſe of the Table, but alſo a Quantity of Trees to ſupply the Kitchen: but where the Kitchen-garden is ſmall, the latter muſt be ſupplied from Standard-trees, either from the Orchard, or where-ever they are planted: but as many of theſe Kitchen-apples are large, and hang late in the Autumn upon the Trees, they will be much more expoſed to the ſtrong Winds, on Standard-trees, than in Eſpaliers; whereby many of the Fruit will be blown down before they are ripe, and others bruiſed, ſo as to prevent their keeping: therefore where it can be done, I ſhould always prefer the planting them in Eſpaliers.

The Diſtance which I ſhould chooſe to allow theſe Trees, ſhould not be leſs than twenty-five Feet, for ſuch Sorts as are of a moderate Growth (if upon Crab or Free-ſtocks): but the larger-growing Sorts ſhould not be allowed leſs room than thirty or thirty-five Feet, which will be found full near enough, if the Ground is good, and the Trees properly trained: for as the Branches of theſe Trees ſhould not be ſhortened, but trained at their full Length, ſo in a few Years they will be found to meet. Indeed, at the firſt Planting, the Diſtance will appear ſo great, to thoſe Perſons who have not obſerved the vigorous Growth of theſe Trees, that they will ſuppoſe they never can extend their Branches ſo far, as to cover the Eſpalier; but if theſe Perſons will but obſerve the Growth of Standard-trees of the ſame Kinds, and ſee how wide their Branches are extended on every Side, they may be ſoon convinced, that as theſe Eſpalier-trees are allowed to ſpread but on two Sides, ſo they will of courſe make more Progreſs, as the whole Nouriſhment of the Root will be employed in theſe Side-branches, than where there is a greater Number of Branches on every Side of the Tree, which are to be ſupplied with the ſame Nouriſhment.

The next thing to be obſerved is, the making choice of ſuch Sorts of Fruits as grow nearly alike, to plant in the ſame Eſpalier. This is of great Conſequence, becauſe of the Diſtance which they are to be placed; otherwiſe thoſe Sorts which make the largeſt Shoots, may be allowed leſs room to ſpread, than thoſe of ſmaller Growth: beſide, when all the Trees in one Eſpalier are nearly equal in Growth, they will have a better Appearance, than when ſome are tall, and others ſhort: but for the better Inſtruction of thoſe Perſons who are not converſant in theſe things, I ſhall divide the Sorts of Apples into three Claſſes, according to their different Growths.

The largeſt-growing Tree.

All the Sorts of Pearmains.
Kentiſh Pippin.
Holland Pippin.
Monſtrous Renette.
Royal Ruſſet.
Wheeler's Ruſſet.
Pile's Ruſſet.
Nonpareil.
Violet Apple.

Middle-growing Tree.

Margaret Apple.
Golden Renette.
Aromatic Pippin.
Embroidered Apple.
Renette Griſe.
White Renette.
Codlin.

Smalleſt-growing Tree.

Quince Apple.
Tranſparent Apple.
Golden Pippin.
Pomme d'Api.
Fenouillet, or Anis-Apple.

N. B. Theſe are all ſuppoſed to be grafted on the ſame Sort of Stocks.

If theſe Apples are grafted upon Crab-ſtocks, I would willingly place them at the following Diſtance from each other; eſpecially where the Soil is good; *viz.* the largeſt-growing Trees at forty Feet, the middle-growing at thirty Feet, and the ſmall-growing at twenty-five Feet, which, from conſtant Experience, I find to be full near enough: for in many Places, where I have planted theſe Trees at twenty-four Feet Diſtance, the Trees have ſhot ſo, as that in ſeven Years their Branches have met: and in ſome Places, where every other Tree hath been taken up, the Branches have almoſt joined in ſeven Years after: therefore it will be much the better way to plant theſe Trees at a proper Diſtance at firſt; and between theſe to plant ſome dwarf Cherries, Currans, or other Sort of Fruit, to bear for a few Years; which may be cut away when the Apple-trees have extended their Branches to them: for when the Apple-trees are planted nearer together, few Perſons care to cut down the Trees, when they are fruitful; ſo that they are obliged to uſe the Knife, Saw, and Chiſſel, more than is proper for the future Good of the Trees: and many times, where Perſons are inclinable to take away Part of their Trees, the Diſtances will be often ſo irregular (where there was not this Conſideration in Planting) as to render the Eſpalier unſightly.

When the Trees are upon the *Dutch* Dwarf-ſtock, the Diſtance ſhould be for the large-growing Trees twenty Feet; for thoſe of middle Growth ſixteen; and the ſmalleſt twelve Feet; which will be found full near, where the Trees thrive well.

The next is the Choice of the Trees, which ſhould not be more than two Years Growth from the Graft; but thoſe of one Year ſhould be preferred: be careful that their Stocks are young, ſound, and ſmooth; free from Canker; and which have not been cut down in the Nurſery: when they are taken up, all the ſmall Fibres ſhould be intirely cut off from their Roots, which, if left on, will turn mouldy, and decay; ſo will obſtruct the new Fibres in their Growth: the extreme Parts of the Roots muſt be ſhortened, and all bruiſed or broken Roots cut off; and if there are any miſplaced Roots, which croſs each other, they ſhould alſo be cut away. As to the Pruning of the Head of theſe Trees, there need be nothing more done, than to cut off any Branches, which are ſo ſituated, as that they cannot be trained to the Line of the Eſpalier: in the Planting there muſt be care taken not to place their Roots too deep in the Ground, eſpecially if the Soil is moiſt; but rather raiſe them on a little Hill, which will be neceſſary to allow for the raiſing of the Borders afterward. The beſt Seaſon for planting theſe Trees (in all Soils which are not very moiſt) is, from *October* to the Middle or Latter-end of *November*, according as the Seaſon continues mild; but ſo ſoon as the Leaves fall, they may be removed with great Safety. After the Trees are planted, it will be proper to place down a Stake to each Tree; to which the Branches ſhould be faſtened, to prevent the Winds from ſhaking or looſening their Roots, which will deſtroy the young Fibres; for when theſe Trees are planted pretty early in the Autumn, they will very ſoon puſh out a great Number of new Fibres; which, being very tender, are ſoon broken; ſo the Trees are greatly injured thereby. If the Winter ſhould prove ſevere, it will be proper to lay ſome rotten Dung, Tanners Bark, or ſome Sort of Mulch, about their Roots, to prevent the Froſt from penetrating of the Ground, which might damage theſe tender Fibres: but I would not adviſe the laying of this Mulch before the Froſt begins; for if it is laid over the Roots, ſoon after the Trees are planted (as is often practiſed), it will prevent the Moiſture entering the Ground, and do much Harm to the Trees.

The following Spring, before the Trees begin to puſh, there ſhould be two or three ſhort Stakes put down on each Side of the Tree, to which the Branches ſhould be faſtened down as horizontally as poſſible, never cutting them down, as is by ſome practiſed; for there will be no Danger of their putting out Branches enough to furniſh the Eſpalier, if the Trees are once well eſtabliſhed in their new Quarters.

In the Pruning of theſe Trees, the chief Point is, never to ſhorten any of the Branches, unleſs there is an abſolute Want of Shoots to fill the Spaces of the Eſpalier: for where the Knife is much uſed, it only multiplies uſeleſs Shoots, and prevents their Fruiting; ſo that the beſt Method to manage theſe Trees is, to go over them three or four times in the growing Seaſon, and rub off all ſuch Shoots as are irregularly produced; and train the others down to the Stakes, in the Poſition they are to remain: if this is carefully performed in Summer, there will be little left to be done in the Winter; and by bending of their Shoots from time to time, as they are produced, there will be no Occaſion to uſe Force, to bring them down, nor any Danger of breaking the Branches. The Diſtance which theſe Branches ſhould be trained from each other, for the largeſt Sorts, ſhould be about ſeven Inches; and for the ſmaller, four or five. If theſe plain Inſtructions are followed, it will ſave much unneceſſary Labour of Pruning; and the Trees will, at all times, make an handſome Appearance: whereas when they are ſuffered to grow rude in Summer, there will be much greater Difficulty to bring down their Shoots, eſpecially if they are grown ſtubborn. All the Sorts of Apples produce their Fruit upon Curſons or Spurs, ſo that theſe ſhould never be cut off; for they will continue fruitful a great Number of Years.

The Method of making the Eſpaliers having been already exhibited under that Article, I need not repeat it here; but only obſerve, that it will be beſt to defer making the Eſpalier, till the Trees have had three or four Years Growth; for before that time the Branches may be ſupported by a few upright Stakes; ſo that there will be no Neceſſity to make the Eſpalier, until there are ſufficient Branches to furniſh the Lower-part.

I ſhall now treat of the Method to plant Orchards, ſo as to have them produce the greateſt Profit. And, firſt, in the Choice of the Soil and Situation for an Orchard: the beſt Situation for an Orchard is, on the Aſcent of gentle Hills, facing the South, or South-eaſt; but this Aſcent muſt not be too ſteep, leſt the Earth ſhould be waſhed down by haſty Rains.

There are many Perſons who prefer low Situations, at the Foot of Hills; but I am thoroughly convinced from Experience, that all Bottoms where there are Hills on every Side, are very improper for this Purpoſe: for the Air is drawn down in ſtrong Currents, which, being pent in on every Side, renders theſe Bottoms much colder, than the open Situations: and during the Winter and Spring, theſe Bottoms are very damp and unhealthy to all Vegetables: therefore the gentle Riſe of an Hill, fully expoſed to the Sun and Air, is by much the beſt Situation. As to the Soil, a gentle hazel Loam, which is eaſy to work, and that doth not detain the Wet, is the beſt: if this happens to be three Feet deep, it will be the better for the Growth of the Trees; for altho' theſe Trees will grow upon very ſtrong Land, yet they are ſeldom ſo thriving, nor are their Fruit ſo well flavour'd, as thoſe which grow on a gentle Soil: and on the other hand, theſe Trees will not do well upon a very dry Gravel or Sand; therefore thoſe Soils ſhould never be made choice of for Orchards.

The Ground intended to be planted ſhould be well prepared the Year before, by plowing it thoroughly; and if ſome Dung is laid upon it the Year before, it will be of great Service to the Trees: if the precedent Spring a Crop of Peas or Beans be planted on the Ground (provided they are ſown or planted in Rows, at a proper Diſtance, ſo that the Ground between them is horſe-hoed), it will deſtroy the Weeds, and looſen the Ground; ſo that it will be a good Preparation for the Trees; for the Earth cannot be too much wrought or pulverized for this Purpoſe: theſe Crops will be taken off the Ground before the Seaſon for planting of theſe Trees; which ſhould be as ſoon as poſſible performed when the Trees begin to ſhed their Leaves.

In chooſing of the Trees, I would adviſe the taking ſuch as are but of two Years Growth, from the Graft, and never to plant old Trees, or ſuch as are grafted upon old Stocks; for it is loſing of time to plant theſe, young Trees being always more certain to grow, and make a much greater Progreſs, than thoſe which are old: as to pruning of the Roots, it muſt be done in the ſame manner as hath been already directed for the Eſpalier-trees: and in pruning their Heads, little more is neceſſary than to cut out ſuch Branches as are ill placed, or that croſs each other: for I do not approve the heading of them down, as is by ſome often practiſed, to the Loſs of many of their Trees.

The Diſtance which theſe Trees ſhould be planted, where the Soil is good, muſt be fifty or ſixty Feet; and where the Soil is not ſo good, forty Feet may be ſufficient: but nothing can be of worſe Conſequence, than the crouding Trees too cloſe together in Orchards: and altho' there may be ſome who may imagine this Diſtance too great, yet I am ſure, when they have thoroughly conſider'd the Advantages attending this Practice, they will agree with me: nor is it my own Authority; for in many of the old Writers on this Subject, there is often mention made of the Neceſſity for allowing a proper Diſtance to the Fruit-trees in Orchards; particularly in *Auſten*, who ſays, *He ſhould chooſe to preſcribe the planting theſe Trees fourteen or ſixteen Yards aſunder; for both Trees and Fruits have many great Advantages, if planted a good Diſtance one from another.* One Advantage he mentions is, *The Sun refreſhes every Tree, the Roots, Body, and Branches, with the Bloſſoms and Fruits; whereby Trees bring forth more Fruits, and thoſe fairer and better.* Another Advantage he mentions is, *That when Trees are planted at a large Diſtance, much Profit may be made of the Ground under and about theſe Trees, by cultivating Garden-ſtuff, commodious as well for Sale as Houſekeeping; as alſo, Gooſberries, Raſberries, Currans and Strawberries, may be there planted.* Again he ſays, *When Trees have room to ſpread, they will grow very large and great; and the Conſequences of that will be, not only Multitudes of Fruits, but alſo long-laſting; and theſe two are no ſmall Advantages: for,* ſays he, *Men are miſtaken, when they ſay, The more Trees in an Orchard, the more Fruits: for one or two large Trees, which have room to ſpread, will bear more Fruits than ſix or ten (it may be) of thoſe that grow near together, and croud one another.* Again he ſays, *Let Men but obſerve, and take Notice of ſome Apple-trees, that grow a great Diſtance from other Trees, and have room enough to ſpread both their Roots and Branches; and they ſhall ſee, that one of thoſe Trees (being come to full Growth) hath a larger Head, and more Boughs and Branches, than (it may be) four, or ſix, or more, of thoſe which grow near together, altho' of the ſame Age.*

And Mr. *Lawſon*, an antient Planter, adviſes to plant Apple-trees twenty Yards aſunder. As the two Authors above quoted have written the beſt upon this Subject, and ſeem to have had more Experience than any of the Writers I have yet ſeen, I have made uſe of them, as Authorities to confirm what I have advanced: tho' the Fact is ſo obvious to every Perſon who will make the leaſt Reflection, that there needs no other Proof.

When the Trees are planted, they ſhould be ſtaked, to prevent their being ſhaken or blown out of the Ground by ſtrong Winds: but in doing of this, there ſhould be particular Care taken, to put either Straw, Haybands, or Woollen Cloth, between the Trees and the Stakes, to prevent the Trees from being rubbed and bruiſed, by the ſhaking againſt the Stakes; for if their Bark ſhould be rubbed off, it will occaſion ſuch great Wounds, as not to be healed over in ſeveral Years, if they ever recover it.

If the Winter ſhould prove very ſevere, it will be proper to cover the Surface of the Ground about their Roots with ſome Mulch, to prevent the Froſt from penetrating the Ground, which will injure the young Fibres: but this Mulch ſhould not be laid on too ſoon, as hath been before-mentioned, leſt the Moiſture ſhould be prevented from ſoaking down to the Roots of the Trees; nor ſhould it lie on too long in the Spring, for the ſame Reaſon: therefore where Perſons will be at the Trouble to lay it on in froſty Weather, and remove it again after the Froſt is over, that the Wet in *February* may have free Acceſs to the Roots of the Trees; and if *March* ſhould prove dry, with ſharp North or Eaſt Winds, which often happens; it will be proper to cover the Ground again with the Mulch, to prevent the Winds from penetrating and drying the Ground; and will be of ſingular Service to the Trees. But I am aware, that this will be objected to by many, on account of the Trouble, which may appear to be great: but when it is conſidered, how much of this Buſineſs may be done by a ſingle Perſon in a ſhort time, it can have little Force; and the Benefit which the Trees will receive by this Management, will greatly recompenſe the Trouble and Expence.

As theſe Trees muſt be conſtantly fenced from Cattle, it will be the beſt way to keep the Land in Tillage; for by conſtant plowing or digging of the Ground, the Roots of the Trees will be encouraged, and they will make the more Progreſs in their Growth: but where this is done, whatever Crops are ſown or planted, ſhould not be too near the Trees, leſt the Nouriſhment ſhould be drawn away from the Trees: and as in the plowing of the Ground there muſt be Care taken not to go too near the Stems of the Trees, whereby their Roots would be injured, or the Bark of their Stems rubbed off; ſo it will be of great Service to dig the Ground about the Trees, where the Plough doth not come, every Autumn, for five or ſix Years after planting; by which time their Roots will have extended themſelves to a greater Diſtance.

It is a common Practice in many Parts of *England*, to lay the Ground down for Paſture, after the Trees are grown pretty large in their Orchards: but this is by no means adviſeable; for I have frequently ſeen Trees of above twenty Years Growth, almoſt deſtroyed by Horſes, in the Compaſs of one Week: and if Sheep are put into Orchards, they will conſtantly rub their Bodies againſt the Stems of the Trees, and their Greaſe ſticking to the Bark will ſtint the Growth of the Trees, and in time will ſpoil them: therefore where-ever Orchards are planted, it will be much the better Method to keep the Ground plowed or dug annually; and ſuch Crops put on the Ground, as will not draw too much Nouriſhment from the Trees.

In pruning of Orchard-trees, nothing more ſhould be done, but to cut out all thoſe Branches which croſs each other, and, if left, would rub and tear off the Bark, as alſo decayed Branches; but never ſhorten any of their Shoots. If Suckers or Shoots from their Stems ſhould come out, they muſt be intirely taken off; and when any Branches are broken by the Wind, they ſhould be cut off, either down to the Diviſion of the Branch, or cloſe to the Stem from whence it was produced: the beſt time for this Work is in *November*; for it ſhould not be dône in froſty Weather, nor in Spring, when the Sap begins to be in Motion.

The beſt Method to keep Apples for Winter-uſe is, to let them hang upon the Trees, until there is Danger of Froſt; to gather them in dry Weather; and then lay them in large Heaps to ſweat for three Weeks, or a Month: afterward look them over carefully, taking out all ſuch as have Appearance of Decay, wipeing all the ſound Fruit dry; and pack them up in large Oil-jars, which have been thoroughly ſcalded and dry, ſtopping them down cloſe, to exclude the external Air: if this is duly obſerved, the Fruit will keep ſound a long time; and their Fleſh will be plump; for when they are expoſed to the Air, their Skins will ſhrink, and their Pulp will be ſoft.

MALUS ARMENIACA. *Vide* Armeniaca.

MALUS AURANTIA. *Vide* Aurantia.

MALUS LIMONIA. *Vide* Limonia.

MALUS MEDICA. *Vide* Citreum.

MALUS PERSICA. *Vide* Perſica.

MALUS PUNICA. *Vide* Punica.

MAMEI, The Mammee-tree.

The *Characters* are;

It hath a roſaceous Flower, which conſiſts of ſeveral Leaves placed in a circular Order; from whoſe Cup ariſes the Pointal, which afterward becomes an almoſt ſpherical fleſhy Fruit, containing two or three Seeds incloſed in hard rough Shells.

There is but one *Species* of this Tree known; *viz.*

MAMEI *magno fructu, perſicæ ſapore. Plum. Nov. Gen.* 44. The Mammee with a large Fruit taſting like a Peach.

This Tree, in the *Weſt-Indies*, grows to the Height of ſixty or ſeventy Feet: the Leaves are large and ſtiff, and continue green all the Year: the Fruit is as large as a Man's Fiſt; when ripe, is of a yellowiſh-green Colour, and is very grateful to the Taſte. It grows in great Plenty in the *Spaniſh Weſt-Indies*, where the Fruit is generally ſold in their Markets, and is eſteemed one of the beſt Fruits of the County. It alſo grows on the Hills of *Jamaica*, and has been tranſplanted into moſt of the *Caribbee* Iſlands, where it thrives exceeding well.

In *England* there are ſome few of theſe Plants, which are preſerved with great Care by ſuch as are curious in cultivating Exotic Plants: but there are none of any conſiderable Size; ſo that we cannot expect to ſee either Fruit or Flowers for ſome Years. Theſe Plants may be propagated by planting the Stones, which are often brought from the *Weſt-Indies* (but theſe Stones ſhould be very freſh, otherwiſe they will not grow), into Pots filled with freſh light Earth, and plunged into an Hot-bed of Tanners Bark.

In about a Month or ſix Weeks the Plants will begin to appear above-ground; after which they muſt be frequently refreſhed with Water; and in hot Weather the Glaſſes of the Hot-bed ſhould be raiſed, to let in freſh Air. In two Months the Roots of the Plants will have filled the Pots; when you ſhould provide ſome Pots of a little larger Size, into which you ſhould tranſplant the Plants, being careful to preſerve as much Earth to their Roots as poſſible; then you ſhould fill up the Pots with freſh light Earth, and plunge them into the Bark-bed again, obſerving to water and ſhade them, until they have taken Root. In this Bed they may remain till *Michaelmas*, when they muſt be removed into the Bark-ſtove, where they muſt be conſtantly kept. obſerving to refreſh them frequently with Water, as alſo to clean their Leaves from the Filth they are apt to contract in the Stove; and the Spring following they ſhould be ſhifted into freſh Earth; and, if they require it, into larger Pots; and muſt be conſtantly kept in the Bark-ſtove, and may be treated after the manner directed for the Coffee-tree.

If, when the Stones of this Fruit are brought over, they are put into the Tan-bed, under the Bottom of any of the Pots, they will ſprout ſooner than thoſe which are planted in the Earth.

MANCANILLA, The Manchineel-tree.

The *Characters* are;

It hath Male Flowers, or Katkins, which are prouduced at remote Diſtances from the Embryoes on the ſame Tree: the Embryo becomes a round fleſhy Fruit, in which is contained a rough woody Nut, incloſing four or five flat Seeds.

The *Species* are;

1. Mancanilla *pyri facie. Plum. Nov. Gen.* 50. The Manchineel with the Face of a Pear-tree.

2. Mancanilla *aquifolii foliis. Plum. Nov.Gen.* 50 The Manchineel with Leaves like Holly.

3. Mancanilla *lauri foliis oblongis. Plum. Nov. Gen.* 50. The Manchineel with oblong Laurel-leaves.

The Manchineel is a Native of the *Weſt-Indies*, where it grows on low ſandy Land, or near Gullies where Water runs. The three Sorts here mentioned are diſtinguiſhed by Botaniſts; but I believe their Difference is not remark'd by the Natives, They grow to be very large Trees. equal to the Size of an Oak, and are much eſteemed for their Wood, which is ſawn out into Planks, and brought over to *England:* it is uſed for Cabinets, Book-caſes, *&c.* and will poliſh very well; is of a beautiful Grain; and will laſt a long time. In cutting down theſe Trees, they are very careful to burn out the Juice of the Bark before they begin; otherwiſe the Perſons are in Danger of loſing their Eyes by ſome of the Sap getting into them, which is of a milky Colour, and ſo very cauſtic, that it will raiſe Bliſters on the Skin, and burn Holes in Linen. The Fruit of this Tree, when ripe, is of the Colour and Size of a Golden-pippin; for which many of the *Europeans* have taken it; and ſome, by eating thereof, loſt their Lives, and others have greatly ſuffered: the Fleſh is not much thicker than a Crown-piece, and not very diſagreeable to the Taſte, but will corrode the Mouth and Throat. The Leaves of theſe Trees alſo abound with a milky Juice, which is of the ſame Nature; ſo that is dangerous to be under their Drip. The Cattle in *America* never ſhelter themſelves under them, nor will any Vegetable ſcarcely grow under their Shade; yet the Goats eat this Fruit, without any manifeſt Injury to themſelves, or their Milk, which is not altered by this Food.

In *England* there are ſome of theſe Trees preſerved by Perſons who are curious in propagating Exotic Plants. They may be raiſed from Seeds, by putting the whole Apple or Nut into to a Pot of freſh Earth, and then plunge it into an Hot-bed of Tanners Bark, obſerving to refreſh the Earth often with Water. From one of theſe Nuts will ariſe four or five Plants, which, when grown about three Inches high, may be ſeparated, and placed each into a ſmall Pot filled with light rich Earth, and plunged again into the Hot bed, obſerving to water and ſhade them, until they have taken Root; after which they muſt be managed as was before directed for the Mammee, to which I refer the Reader, to avoid Repetition. In ſhifting of theſe Plants from one Pot into another, great Care ſhould be had, not to break their Leaves; for then they will greatly bleed, and thereby the Plants will be weakened; and it is very dangerous to let any of the Juice fall on any tender Part of the Body; for it will raiſe a Bliſter: and if it fall on Cloth, it will make Holes therein, as bad as if *Aqua fortis* were dropp'd on it.

MANDRAGORA, Mandrake.

The *Characters* are;

The Flower conſiſts of one Leaf, in the Shape of a Bell, and is divided at the Top into ſeveral Parts: the Pointal afterward becomes a globular ſoft Fruit, in which are contained many kidney-ſhaped Seeds.

The *Species* are;

1. MANDRAGORA *fructu rotundo. C. B. P.* Common Mandrake, with a round Fruit.

2. MANDRAGORA *flore ſubcæruleo purpuraſcente. C. B. P.* Mandrake with a purpliſh-blue Flower.

Theſe Plants are propagated by Seeds, which ſhould be ſown upon a Bed of light Earth ſoon after they are ripe; for, if they are kept until the Spring, they ſeldom ſucceed well; but thoſe which are ſown in Autumn will come up in the Spring, when they ſhould be carefully clear'd from Weeds; and, in very dry Weather, they muſt be refreſhed with Water, which will greatly promote their Growth: in this Bed they ſhould remain till the Latter-end of *Auguſt* (obſerving always to keep them clear from Weeds); at which time they ſhould be taken up very carefully, and tranſplanted into the Places where they are to remain, which ſhould be a light deep Soil; for their Roots always run downward very deep; ſo that, if the Soil be wet, they are often rotted in Winter; and, if it be too near the Gravel or Chalk, they ſeldom thrive well: but, if the Soil be good, and they are not diſturbed, the Plants will grow to a large Size in a few Years, and will produce great Quantities of Flowers and Fruit, and they will abide a great many Years.

I have been informed by ſome Perſons of Credit, that one of theſe Roots will remain ſound above fifty Years, and be as vigorous as a young Plant. I have known ſome Plants near forty Years myſelf, which are now in great Vigour, and may continue ſo many Years longer, as there are no Signs of their Decay: but they ſhould never be removed after their Roots have arriv'd to any conſiderable Size, which would break their lower Fibres, and ſo ſtint the Plants, as that they will not recover their former Strength in two or three Years.

As to the feigned Reſemblance of an human Form, which the Roots of this Plant are ſaid to carry, 'tis all Impoſture, owing to the Cunning of Quacks and Mountebanks, who deceive the Populace, and the Ignorant, with fictitious Images ſhaped from the freſh Roots of Eryony, and other Plants: and what is reported as to the Manner of rooting up this Plant, by tying a Dog thereto, to prevent the certain Death of the Perſon who ſhould dare to attempt it, and the Groans it emits upon the Force offer'd, &c. is all a ridiculous Fable; for I have taken up ſeveral large Roots of this Plant, ſome of which have been tranſplanted into other Places, but could never obſerve any particular Difference in this from any other deep-rooting Plant.

MANIHOT, Caſſavi, or Caſſada.

The *Characters* are;

It hath a ſhort ſpreading bell-ſhaped Flower, conſiſting of one Leaf, which is cut into ſeveral Parts, whoſe Pointal afterward becomes a roundiſh Fruit, compoſed of three Cells, which are joined together; in each of which is contained one oblong Seed: to theſe Notes ſhould be added, Male Flowers, which have no Pointal, growing round the Female, which fall off, and are never fruitful.

The *Species* are;

1. MANIHOT *Theveti Juca & Caſſavi. J. B. Inſt. R. H.* The common Caſſavi, or Caſſada.

2. MANIHOT *ſpinoſiſſima, folio vitigineo. Plum. Cat.* The moſt prickly Caſſavi, with a Chaſte-tree-leaf.

3. MANIHOT *arboreſcens minus ſpinoſa, floribus albis umbellatis, foliis aconiti urentibus. Houſt.* Tree-like leſs-prickly Caſſavi, with white Flowers growing in Umbels, and a ſtinging Wolfsbane-leaf.

4. MANIHOT *fruteſcens non ſpinoſa, foliis glabris, & minus laciniatis. Houſt.* Shrubby Caſſavi without Prickles, and ſmooth Leaves, which are leſs divided.

5. MANIHOT *ulmi folio ampliore. Plum. Cat.* Caſſavi with an ample Elm-leaf.

6. MANIHOT *ulmi folio anguſtiore. Plum. Cat.* Caſſavi with a narrow Elm-leaf.

The firſt Sort is cultivated in all the warm Parts of *America*, where the Root is ground to Flour, after being diveſted of its Juice; and then is made into Cakes, which are uſed for Bread. Of this there are two Sorts, which are not diſtinguiſhed by the Botaniſts; one of which, *viz.* the moſt common, hath purpliſh Stalks, and the Veins of the Leaves are alſo of a purpliſh Colour; but the Stalks of the other are green, and the Leaves are of a lighter-green Colour. The laſt of theſe Sorts is not venomous, even while the Roots are freſh, and full of Juice; for the Negroes frequently dig up the Roots, and, after roaſting them, eat them in the ſame manner as Potatoes, without any ill Effects. This Sort is known by the *Spaniards*, who call it *Camanioc:* but this being more light and ſpongy than the common Sort, and requiring a longer time to grow to Maturity, is planted by few People in *America*.

The Caſſada is propagated by Cuttings, which the Inhabitants of *America* plant, at their rainy Seaſons: theſe Cuttings are taken from thoſe Plants, whoſe Roots are grown to Maturity, for Uſe: the Cuttings are generally about fifteen or ſixteen Inches in Length, and are planted a Foot or fourteen Inches deep in the Ground, leaving about two or three Inches of the Cutting above the Surface. The Land in which this is planted, muſt be well wrought, and cleanſed from the Roots of noxious Weeds; then there ſhould be a Trench opened croſs the Ground about a Foot deep, in which the Cuttings ſhould be placed at about a Foot Diſtance from each other, leaving a ſmall Part of each Cutting above the Surface: then the Earth ſhould be filled into the Trench again, and gently preſſed with the Feet about each Cutting, to prevent the Sun and Air from penetrating of the Ground, which would dry the Cuttings too much, and ſo prevent their taking Root. Theſe Trenches ſhould be made about three Feet aſunder, that there may be room to hoe between the Rows to deſtroy the Weeds; which, if permitted to grow, will ſoon overbear the Plants, and deſtroy them. The Cuttings ſhould not be planted immediately after they are taken from the old Plants, but ſhould be laid to dry in a ſhady Place for two Days; for as they abound with a milky Juice, if the Part where they are cut be not healed over, they will be ſubject to rot, as is the Caſe with moſt milky Plants.

When the Cuttings have taken Root, they require no farther Care, but to keep them clear from Weeds; and in about eight or nine Months time the Roots will have grown to Maturity; which, in good Ground, will be as large as the Calf of a Man's Leg, but commonly as large as good Parſneps, if the Ground be tolerably good. Then the Ground muſt be opened about each Plant, to take up the Roots intire, and pare off their Skins; then they throw them into a Tub of Water, and waſh them well; after which they raſp them on a coarſe Raſp, to reduce them to a rough Flour like Sawduſt; then they preſs out all the Juice with a Preſs, and afterward it is fit for Uſe.

In *Europe* theſe Plants are preſerved by many Perſons who are curious in collecting of rare Plants: but they will not thrive, unleſs they are kept in Stoves; for they are all of them very tender Plants. The ſecond Sort is only propagated by Seeds which muſt be procured from the Places of its natural Growth; for it never produces good Seeds in this Country.

The Seeds of this Sort were ſent into *England* by the late Dr. *William Houſtoun*, who gathered them on the Sands near *Vera Cruz*, in the *Spaniſh Weſt-Indies*, where it grows in great Plenty: it was alſo found at *Campechy* by Mr. *Robert Millar*, Surgeon. This Kind ſeldom riſes above eighteen Inches or two Feet high; and the Stalks, Leaves, and every Part of it, are cloſely beſet with ſtrong Prickles; ſo that it is difficult to touch them, without receiving an Injury from the Spines. At the Top of the Shoots there are ſome white Flowers, which are produced in an Umbel, ſome of which are Male, having many *Stamina* or Threads in each; but the Female Flowers reſt on the Embryoes, which afterward become the Fruit.

The third Sort was alſo diſcovered by the late Dr. *William Houſtoun*, near *La Vera Cruz*: this grows to the Height of twelve or fourteen Feet: the Trunk of this becomes woody, and divides at the Top into many Branches, which are beſet with Leaves, in Shape like thoſe of Wolfsbane: theſe are armed with ſmall Spines, which ſting like thoſe of the Nettle. The Flowers of this Kind are white, and grow in an Umbel on the Top of the Branches, and are produced throughout the whole Year. This Sort may be propagated by Cuttings, in the ſame manner as the firſt.

The fourth Sort is ſomewhat like the wholſome Kind; but is not met with in any of our Settlements: this was found in the Iſland of *Cuba*, by the late Dr. *Houſtoun*. All theſe Sorts have large tuberoſe Roots, which abide ſome Years; and may therefore be preſerved by the Curious.

rious. When the Kinds are obtained from abroad, they muſt be planted in Pots filled with freſh light Earth, which is not over-rich, and plunged into the Bark-bed in the Stove; where, during the Summer-ſeaſon, they ſhould have a large Share of freſh Air admitted to them, by opening the Glaſſes in warm Weather; and they muſt be frequently refreſhed with Water: but in Winter they muſt be kept very warm, and ſhould be watered more ſparingly, eſpecially if the Plants die down to the Root, which the ſecond Sort is very apt to do in Winter in this Country; at which time Moiſture will rot the Roots, while they are in an unactive State.

When the Seeds of theſe Plants are procured from abroad, they ſhould be ſown in Pots filled with freſh light Earth, and plunged into an Hot-bed of Tanners Bark; and when the Plants are come up two Inches high, they ſhould be tranſplanted into a ſeparate Pot filled with freſh light Earth, and plunged into the Hot-bed again; being careful to ſhade them from the Sun, until they have taken new Root. In this Hot-bed the Plants may remain during the Summer-ſeaſon; but at *Michaelmas* they muſt be removed into the Stove, and treated after the manner as was before directed.

The Seeds of theſe Plants very often prove abortive, having a fair outer Covering; but when broken, have no Germ within, ſo that very few of them grow: therefore it is proper to put them into Water, and take only ſuch for ſowing as ſink to the Bottom of the Veſſel; for all thoſe which ſwim on the Surface of the Water, are bad Seeds.

MAPLE. *Vide* Acer.

MARACOCK. *Vide* Granadilla.

MARANTA, *Indian* Arrowroot.

The *Characters* are;

It hath a Flower conſiſting of one Leaf, which is almoſt funnel-ſhaped, opening in ſix Parts, three of which are alternately larger than the other: the Lower-part of the Flower-cup afterward becomes an oval-ſhaped Fruit, conſiſting of one Cell, in which is one hard rough Seed.

The *Species* are;

1. MARANTA *arundinacea, cannacori folio. Plum. Nov. Gen.* Reed-like *Indian* Arrow-root, with a Leaf like the *Indian* Reed.

2. MARANTA *cannacori folio, flore minimo albo. Houſt. Indian* Arrow-root, with a Leaf like the flowering Reed, and the leaſt white Flower.

The firſt Sort was diſcovered by Father *Plumier* in ſome of the *French* Settlements in *America*, who gave it the Name, in Honour to one *Bartholomew Maranta*, an antient Botaniſt. The Seeds of this Kind were ſent to *Europe* by the late Dr. *William Houſtoun*, who found the Plant growing in plenty near *La Vera Cruz* in *New-Spain*.

The other Sort was brought from ſome of the *Spaniſh* Settlements in *America*, into the Iſlands of *Barbados* and *Jamaica*; where it is cultivated in their Gardens as a medicinal Plant, it being a ſovereign Remedy to cure the Bite of Waſps, and to extract the Poiſon of the Manchinee-Tree. The *Indians* apply the Root to expel the Poiſon of their Arrows, which they uſe with great Succeſs. They take up the Roots, and after cleanſing them from Dirt, they maſh them, and apply it as a Pultis to the wounded Part; which draws out the Poiſon, and heals the Wound. It will alſo ſtop a Gangrene, if it be applied beſore it is gone too far; ſo that it is a very valuable Plant.

Theſe Plants, being Natives of a warm Country, are very tender; and therefore will not live in this Climate, unleſs they are preſerved in Stoves.

They may be propagated by their creeping Roots, which ſhould be parted in the Middle of *March*, juſt before they begin to puſh out new Leaves. Theſe Roots ſhould be planted in Pots filled with light rich Earth, and plunged into a moderate Hot-bed of Tanners Bark, obſerving now-and-then to refreſh them with Water; but it muſt not be given to them in large Quantities; for too much Moiſture will ſoon rot the Roots, when they are in an unactive State. When the green Leaves appear above-ground, the Plants will require more frequently to be watered. As the Plants advance in Strength, they ſhould have a greater Share of Air; but they muſt conſtantly remain in the Stove plunged in the Tan, otherwiſe they will not thrive: for when the Pots are placed on Shelves in the Stove, the Moiſture paſſes too ſoon from the Fibres, which generally are ſpread to the Sides and Bottoms of the Pots, ſo that the Plants do not receive much Nouriſhment from the Water. But where they are conſtantly kept in the Tanners Bark, and have proper Air and Moiſture, they will thrive; ſo as from a ſmall Root to fill the Pot in which it was planted, in one Summer.

About *Michaelmas* the firſt Sort will begin to decay, and in a ſhort time after the Leaves will die to the Ground; but the Pots muſt be continued all the Winter in the Bark-bed, otherwiſe the Roots will periſh; for altho' they are in an unactive State, yet they will not keep good very long, when taken out of the Ground; and if the Pots are taken out of the Tan, and placed in any dry Part of the Stove, the Roots often ſhrivel and decay; but when they are continued in the Tan, they ſhould have but little Water given to them, when their Leaves are decayed, leſt it rot them. The firſt Sort doth flower conſtantly in *July* or *Auguſt*, and will often produce ripe Seeds in *England*; but the ſecond Sort doth not flower ſo conſtant, nor do the Flowers appear ſo conſpicuous; being very ſmall, and of a ſhort Duration.

This Sort never hath produced any Seeds in *England*; nor could I ever obſerve any Rudiments of a Seed-veſſel ſucceeding the Flower. The green Leaves abide on this Sort moſt Part of the Winter, ſeldom decaying till *February*; and ſometimes will continue green until freſh Leaves come up, and thruſt the old ones off; in which Particular there is a more remarkable Difference between the two Sorts, than can be obſerved in the Face of the Plants.

MARJORAM. *Vide* Majorana.

MARRUBIASTRUM, Baſtard Horehound. *Vide* Cunila.

MARRUBIUM, Horehound.

The *Characters* are;

It is a verticillate Plant, with a Lip-flower conſiſting of one Leaf; whoſe Upper-lip (or Creſt) is upright, with two Horns; but the Under-lip (or Beard) is divided into three Parts: the Pointal, which is fix'd to the Hinder-part of the Flower, is attended by four Embryoes, which become ſo many oblong Seeds, inclos'd in the Flower-cup.

The *Species* are;

1. Marrubium *album vulgare. C. B. P.* Common white Horehound.

2. **Marrubium** *album latifolium peregrinum. C. B. P.* Broad-leav'd foreign white Horehound.

3. **Marrubium** *album anguſtifolium peregrinum. C. B. P.* Narrow-leav'd foreign white Horehound.

4. **Marrubium** *alyſſon dictum, foliis profunde inciſis. H. L.* Horehound, call'd Madwort, with Leaves deeply cut in.

5. **Marrubium** *Hiſpanicum ſupinum, foliis ſericeis argenteis. Tourn.* Low *Spaniſh* Horehound, with ſilken ſilver-colour'd Leaves.

There are ſome other Species of this Plant, which are preſerv'd in curious Botanic Gardens, for the ſake of Variety: but as they are of no Uſe or Beauty, it would be needleſs to enumerate them in this Place.

The firſt Sort here mention'd is us'd in Medicine: this is found wild in divers Parts of *England*. The other Sorts are only kept by ſuch as delight in Variety of Plants; for they have no great Beauty in their Flowers, nor are there any Uſes to which they are applied.

They may be all propagated by ſowing their Seeds in *March* upon a Bed of freſh light Earth; and when they are come up, they ſhould be tranſplanted out into a dry Soil, at about eighteen Inches or two Feet aſunder; where they will require no farther Culture than only to keep them clear from Weeds. But the fourth Sort is ſomewhat tender, and ſhould have a warm Situation, otherwiſe it would be often kill'd by Froſts. This is a biennial Plant.

MARRUBIUM NIGRUM. *Vide* Ballote.

MARTAGON. *Vide* Lilium.

MARTYNIA.

This Name was given by the late Dr. *William Houſtoun* to this Genus of Plants, which he diſcover'd in *America*, in Honour to his Friend Mr. *John Martyn*, Profeſſor of Botany at *Cambridge*.

The *Characters* are;

It hath an anomalous Flower conſiſting of one Leaf, which is divided into two Lips: the Upper-lip is erect, and ſlightly cut into two Parts; but the Under-lip is cut into three Parts, the middle Segment being larger than the other two: the Flower is ſucceeded by a Fruit having a ſtrong thick Covering, in which is incloſed a very hard Nut, having two ſharp crooked Horns at one End; and in the Nut are included four Seeds, lodged in ſo many ſeparate Cells.

The *Species* are;

1. **Martynia** *annua villoſa & viſcoſa, folio ſubrotundo, flore magno rubro. Houſt.* Annual hairy viſcous Martynia, with a roundiſh Leaf, and a large red Flower.

2. **Martynia** *annua villoſa & viſcoſa, aceris folio, flore albo, tubo longiſſimo. Houſt.* Annual hairy viſcous Martynia, with a Maple-leaf, and a white Flower, having a very long Tube.

3. **Martynia** *foliis ſerratis. Lin. Hort. Cliff.* Martynia with ſawed Leaves.

The firſt of theſe Plants was diſcovered by the late Dr. *William Houſtoun*, near *La Vera Cruz* in *New-Spain*, from whence he ſent the Seeds into *England*; which ſucceeded very well in the Phyſic-garden at *Chelſea*: and in the Year 1731. ſeveral of theſe Plants were raiſed, which produced their beautiful Flowers, and perfected their Seeds; from whence ſeveral Plants were raiſed the ſucceeding Year.

The ſecond Sort was diſcovered by the ſame curious Gentleman in the Year 1733. near *Carthagena* in

New-Spain; from whence he ſent dried Samples of the Plant, with ſome of the Seeds, to *England*; but they did not ſucceed.

The Seeds of the third Sort were ſent from *Carthagena* by Mr. *Robert Millar*, Surgeon, from which ſome of the Plants were raiſed in the Gardens of Mr. *George Clifford* of *Amſterdam*; where they have flowered; but have not produced any Seeds in *Europe*. This Sort increaſes greatly by its Roots, which creep underground, ſo as to fill the Pots in which they are planted, in one Seaſon.

The two firſt Sorts, being annual Plants, are only propagated by Seed, which ſhould be ſown in Pots filled with light rich Earth, and plunged into an Hot-bed of Tanners Bark; where (if the Earth is duly watered to promote the Vegetation of the Seed) the Plants will appear in about a Fortnight or three Weeks, and will grow pretty faſt, if the Bed is warm: they ſhould therefore be tranſplanted in a little time after they come up, each into a ſeparate Pot filled with light rich Earth, and then plunged into the Hot-bed again; obſerving to water them well, as alſo to ſhade them from the Sun, until they have taken new Root; after which time they ſhould have a large Share of freſh Air admitted to them in warm Weather. With this Management, the Plants will make great Progreſs, ſo as to fill the Pots with their Roots in about a Month's time; when they ſhould be ſhifted into Pots, about a Foot Diameter at the Top; which ſhould be filled with light rich Earth, and then plunged into the Hot-bed in the Bark-ſtove, where they ſhould be allowed room; becauſe they put out many Side-branches, and will grow three Feet high or more, according to the Warmth of the Bed, and the Care which is taken to ſupply them conſtantly with Water. About the Middle of *July* the Plants will begin to ſhew their Flowers, which are produced in a Spike from the Top of the Plants; which, of the firſt Sort, are like thoſe of the Fox-glove. As the firſt Spike of Flowers decays, they are ſucceeded by Spikes from all the Side-branches; ſo that the Plants continue in Flower until *Michaelmas*, or later, if the Seaſon proves favourable: but it is only from the firſt Spike of Flowers that good Seeds can be expected in this Country; ſo that particular Care ſhould be taken, that none of thoſe are pulled off or deſtroyed; becauſe it is very difficult to obtain good Seeds in this Country; and I believe few of thoſe which are produced on the Side-branches in the natural Country of their Growth, are duly ripened; for I have received a great Quantity of theſe Seeds from abroad, which have appeared to be very good, and yet few of them have produced Plants.

The Seeds of theſe Plants have a ſtrong green Covering on them, as thick as the outer Covering of an Almond; and when the Seeds are ripe, the Covering opens, and lets the Seeds fall, in the ſame manner as the Covering of Almonds, Walnuts, &c. In each Covering there is one hard Nut, in Shape ſomewhat like a Beetle, having two ſharp crooked Horns at one End. This Nut contains four Embryoes; but there are ſeldom more than two Seeds which are perfect in any of them. However, when they are ſown, the whole Nut muſt be planted; for it is ſo hard, that it is impoſſible to take out the Seeds without

out ſpoiling them; and where there are two Plants produced from the ſame Nut, they are eaſily ſeparated, when they are tranſplanted. Theſe Seeds will continue good for ſome Years; for I had ſaved a pretty large Quantity of them in the Year 1734. Part of which I ſowed the following Year, but had not one Plant produced; the Remainder of the Seeds I divided, and ſowed ſome of them every ſucceeding Year, without any Succeſs, until the Year 1738. when I ſowed all the Seeds I had left, from which I had one Plant produced: ſo that if the Seeds are good, it is evident they will grow when they are four Years old. Therefore, whenever we receive good Seeds from abroad, or ſave any in this Country which are perfectly ripened, it will be proper to preſerve ſome of them for a Year or two, leſt a bad Seaſon ſhould happen, when the Plants may not perfect their Seeds; ſo that if this Precaution be not taken, the Species may be loſt in *Europe*.

The third Sort dies to the Root every Winter, and riſes again the ſucceeding Spring: this muſt be conſtantly preſerved in the Stove, and plunged into the Bark-bed, otherwiſe it will not thrive in this Country. During the Winter-ſeaſon, when the Plants are decayed, they ſhould have but little Water given to them; for Moiſture at that time will rot the Roots. In the Beginning of *March*, juſt before the Plants begin to ſhoot, is the proper Seaſon to tranſplant and part the Roots; when they ſhould be planted into Pots of a middle Size, filled with light rich Earth, and then plunged into the Bark-bed, which ſhould at this time be renewed with freſh Tan. When the Plants come up, they muſt be frequently refreſhed with Water; but it muſt not be given to them in large Quantities, leſt it rot their tender Roots; and as the Warmth of the Seaſon increaſes, it will be proper to admit a large Share of freſh Air, which will greatly ſtrengthen the Plants; but they muſt conſtantly remain in the Stove, otherwiſe they will not produce Flowers in this Country. The time of their Flowering is in the End of *July*, and in *Auguſt*; but in *October* the Plants die to their Roots.

MARVEL OF PERU. *Vide* Jalapa.

MARUM, Maſtich.

The *Characters* are;

It is a Plant with a Lip-flower, conſiſting of one Leaf; but has no Galea *(or Creſt), the* Stamina *ſupplying the Place of it; but the Under-lip is divided into five large Segments, the middlemoſt of which is hollow like a Spoon: theſe Flowers are produc'd ſingle from the Wings of the Leaves: to which may be added, It has the Appearance of a Shrub, and an hot volatile Smell.*

We have but one *Species* of this Plant at preſent in *England*; which is,

Marum *Syriacum vel Creticum. H. L. Syrian* Maſtich, *vulgo.*

This Plant is propagated by planting Cuttings, in any of the Summer-months, upon a Bed of freſh light Earth, obſerving to water and ſhade them, until they have taken Root; after which they may be tranſplanted either into Pots or Borders of the ſame freſh light rich Earth: but the greateſt Difficulty is, to preſerve it from the Cats; which will come from a great Diſtance to tear this Plant in Pieces, and from which there is ſcarcely any guarding it, eſpecially near Towns and Cities, where there are many of theſe Animals; unleſs by planting large Quantities

tities of it: for it is obſervable, that where there are but few of them, the Cats will not leave them until they have quite demoliſh'd them; whereas, when a large Quantity of the Plants are ſet in the ſame Place, they will not come near them.

Thoſe Plants which are put into Pots, ſhould be ſhelter'd in Winter; but thoſe in the full Ground will abide the Cold of our ordinary Winters very well, provided they are planted on a warm dry Soil; and may be clipt into Pyramids or Balls; in which Figures I have ſeen ſome Plants of this Kind near three Feet high, which have endur'd the open Air ſeveral Years without any Covering.

MARUM VULGARE. *Vide* Maſtichina.

MARYGOLD *Vide* Caltha.

MARYGOLD (AFRICAN). *Vide* Tagetes.

MARYGOLD (FIG). *Vide* Ficoides.

MARYGOLD (FRENCH). *Vide* Tagetes.

MASTERWORT. *Vide* Imperatoria.

MASTICHINA, Herb-maſtich, or Maſtich-thyme.

The *Characters* are;

The Leaves are like thoſe of Thyme, but larger: the Stalks are upright and ſhrubby: the Cup of the Flower is long, narrow, and tubulous; but is ſpread open at the Top, where it is cut into five long ſlender Segments, and has a Woollineſs over every Part of it: the Galea *(or Creſt) of the Flower ſtands upright, and is divided into two Parts: the Beard (or Lower-lip) is divided into three Segments, ſo that it appears ſomewhat like a Flower with five Leaves: the Flowers are collected into thick Whorles, and have a white Down growing upon the oblong Heads.*

The *Species* are;

1. MASTICHINA. *Boerh. Ind.* Herb-maſtich, or Maſtich-thyme.

2. MASTICHINA *foliis minore.* Herb-maſtich with a leſſer Leaf.

There ſeems to be another Variety of this Plant in ſome of the *Engliſh* Gardens, which is of humbler Growth than the common Sort: the Spikes of Flowers are alſo ſhorter and looſer; but the Leaves are full as large as thoſe of the common Sort. This I don't remember to have ſeen taken notice of in any of the Books of Botany, though it ſeems conſtantly to retain this Difference.

Theſe Plants may be propagated by planting Cuttings, during any of the Summer-months, in a Bed of light rich Earth; obſerving to water and ſhade them, until they have taken Root: after which they may be tranſplanted into a light dry Soil, and have a warm Situation; where they will endure the Cold of our ordinary Winters very well; and produce great Quantities of Flowers in *July*; but ſeldom ripen their Seeds in this Country.

The flowering Part of this Plant is order'd as an Ingredient in Venice-treacle; for which Purpoſe it ſhould be propagated in Phyſic-gardens. And the Plant, having an agreeable Scent, and being eaſily cultivated, may merit a Place in the Borders of every good Garden; where it may be reduc'd to a regular Head, and will appear very handſome.

MATRICARIA, Feverfew.

The *Characters* are;

It hath a fibroſe Root: the Leaves are conjugated, and divided into many Segments: the Cup of the Flower is ſquamoſe, and hemiſpherical: the Flowers grow in an Umbel upon the Top of the Stalks, and the Rays of the Flower are, for the moſt part, white.

The *Species* are;

1. Matricaria *vulgaris ſativa*. *C. B. P.* Common Feverfew.

2. Matricaria *vulgaris vel ſativa, caulibus rubentibus*. *H. L.* Common Feverfew, with rediſh Stalks.

3. Matricaria *vulgaris vel ſativa, floribus nudis bullatis*. *H. L.* Common Feverfew, with naked Flowers.

4. Matricaria *vulgaris vel ſativa, florum petalis fiſtuloſis*. *H. L.* Common Feverfew, with the Petals of the Flower quilled or fiſtulous.

5. Matricaria *vulgaris vel ſativa, florum petalis fiſtuloſis & brevioribus*. *H. L.* Common Feverfew, with ſhort fiſtulous Petals.

6. Matricaria *flore pleno*. *C. B. P.* Double-flower'd Feverfew.

7. Matricaria *flore pleno, petalis fiſtuloſis*. *H. L.* Feverfew with double fiſtulous Flowers.

8. Matricaria *flore pleno, petalis marginalibus planis, diſcoidibus fiſtuloſis*. *H. L.* Double Feverfew, with the Petals round the Border plain; but thoſe in the Middle of the Flower fiſtulous.

9. Matricaria *foliis elegantiſſimis criſpis, & petalis florum fiſtuloſis*. *Tourn.* Feverfew with elegant curl'd Leaves, and the Petals of the Flowers fiſtulous.

The firſt of theſe Species (which is the Sort uſed in Medicine) is found wild upon Dunghils, and uncultivated Places, in divers Parts of *England*; but is cultivated in thoſe Gardens which propagate medicinal Plants to ſupply the Markets. The other Sorts are preſerved in curious Botanic Gardens for Variety; and the ſixth, ſeventh, and eighth Sorts deſerve a Place in the Borders of large Gardens, for the Beauty of their Flowers.

Theſe Plants are propagated by their Seeds, which ſhould be ſown in *March*, upon a Bed of light Earth; and, when they are come up, they ſhould be tranſplanted out into Nurſery-beds, at about eight Inches aſunder, where they may remain till the Middle of *May*; when they may be taken up, with a Ball of Earth to their Roots, and planted in the Middle of large Borders, where they will flower in *July* and *Auguſt*; and, if the Autumn be favourable, will produce ripe Seeds the ſame Year. But it is not adviſeable to permit them to ſeed, which often weakens and decays the Roots; therefore, when their Flowers are paſt, you ſhould cut down their Stems, which will cauſe them to puſh out freſh Heads, whereby the Roots will be maintain'd.

When the different Varieties of theſe Plants are intermix'd with other Plants of the ſame Growth, they make an handſome Appearance during their Seaſon of Flowering; which commonly continues a full Month, or more; ſo they may be allowed a Place in large Gardens, where there is room for Variety. But as their Roots ſeldom abide more than two or three Years, freſh Plants ſhould be raiſed from Seeds, to ſupply their Places; for although they may be propagated by parting their Roots either in Spring or Autumn, yet theſe ſeldom make ſo good Plants as thoſe obtained from Seeds. But the ſixth Sort ſeldom produces any good Seeds: therefore that muſt be propagated in this manner, or by planting Cuttings in the Spring or Summer Months, which will take Root, and make good Plants.

MAUDLIN. *Vide* Ageratum.

MAUROCENIA. The *Hottentot* Cherry, *vulgo*.

The *Characters* are;

The Empalement of the Flower conſiſts of one Leaf, which is cut into five ſmall Segments: the Flower is divided into five Parts, and expands in form of a Roſe: in the Centre of the Flower is ſituated the Pointal, attended by five Stamina, *which are erect, and longer than the Petals: the Pointal afterward turns to an oval Fruit, containing three oblong Seeds included in the Pulp.*

We have but one *Species* of this Plant; *viz.*

Maurocenia. *Lin. Hort. Cliff.* The large *Hottentot* Cherry, *vulgo.*

This Plant hath been many Years preſerved in curious Gardens, and hath commonly been known by the Name of *Hottentot* Cherry: and as there are two other Plants which have alſo been received by this Name, ſo this hath been diſtinguiſhed from them, by the Title of *Major*; one of the other being called *Media*, and the other *Minor*; but as neither of thoſe two have produced Flowers in *England*, ſo it is uncertain what Genus to range the laſt under. The ſecond is placed under that of *Padus*, by Dr. *Burman*; ſo that neither of them are of this Family.

Dr. *Dillenius* has exhibited the Figure of this Plant, in the *Hortus Elthamenſis*, under the Title of *Frangula ſempervirens, folio rigido ſubrotundo*: and Dr. *Boerhaave*, in his *Catalogue of the* Leyden *Garden*, calls it, *Ceraſus Afra, folio rotundo craſſiſſimo rigido ſplendente*: but Dr. *Linnæus* ſeparated it from both theſe *Genera*, and gave it this Title; tho', in the laſt Edition of his *Genera Plantarum*, he has joined this to the *Caſſine*; but in this he has been miſtaken.

This is a Native of the *Cape of Good Hope*, from whence it was introduced into the Gardens in *Holland*; and hath ſince been ſpread into moſt Parts of *Europe*. The Leaves of this Plant are thicker than thoſe of any other Plant yet known; and are almoſt round, having very ſhort Pedicles; ſo that they grow cloſe to the Branches. Theſe are ſmooth, and of a deep-green Colour: the young Shoots of the Plant are generally very red, when they firſt appear; but afterward change to the ſame Colour as the older Branches. It rarely produces any Flowers in *England*; but the ſingular Structure of the Leaves has occaſioned its being preſerved in the Gardens of ſuch Perſons, who are Lovers of Exotic Plants.

This Plant is too tender to live in the open Air thro' the Winter, in *England*; but may be preſerved in a good Green-houſe, where it may be treated in the ſame manner as the Orange-tree, with which Culture this Plant will thrive very well.

It is propagated by laying down of the Branches in the Autumn, which are generally a whole Year, and ſometimes longer, before they take Root. When theſe Branches are laid down, it will be proper to ſlit or tongue them at a Joint (as is practiſed in laying down Carnations). This will promote their putting out of Roots: but theſe Layers muſt conſtantly be ſupplied with Water, eſpecially in the Summer-ſeaſon, otherwiſe they will not take Root in leſs than two Years.

I have ſometimes propagated this Plant by Cuttings; but they are a long time before they take Root; ſo that this is a very tedious Method: therefore that of laying down the Branches ſhould be preferred.

MAYS, *Indian* Wheat.

The Title of this Genus is altered by Dr. *Linnæus* to *Zea*.

The *Characters* are;

The whole Plant hath the Appearance of a Reed: the Male Flowers are produced at remote Diſtances from the Fruit on the ſame Plant, growing, for the moſt part, in a Panicle upon the Top of the Stalk: the Female Flowers are produced from the Wings of the Leaves, and are ſurrounded by three or four Leaves, which cloſely adhere to the Fruit until it is ripe.

The *Species* are;

1. MAYS *granis aureis. Tourn.* Common *Indian* Wheat, with yellow Grains.

2. MAYS *granis albicantibus. Tourn.* *Indian* Wheat, with white Grains.

2. MAYS *granis rubris. Tourn.* *Indian* Wheat, with red Grains.

3. MAYS *granis violaceis. Tourn.* *Indian* Wheat, with violet-coloured Grains.

5. MAYS *minor, granis luteis.* Leſſer *Indian* Wheat, with yellow Grains.

6. MAYS *minor, granis rubris.* Leſſer *Indian* Wheat, with red Grains.

7. MAYS *minor, granis violaceis.* Leſſer *Indian* Wheat, with violet-colour'd Grains.

There are ſome other Varieties in the Colour of the Grains of this Plant, which are chiefly occaſion'd by the interchanging of the *Farina* of one Sort with that of another, whereby the Spikes are often of two or three different Colours, as it commonly happens when the ſeveral Colours are planted in the ſame Spot of Ground.

This Plant is ſeldom propagated in *England* but as a Curioſity in ſome Gardens; but in *America* it is one of their greateſt Supports, and is there cultivated with great Care, in the following manner:

They dig the Ground well in the Spring, and, after having dreſſed it well, they draw a Line acroſs the whole Width of the Piece intended to be planted; then they raiſe little Hills of Earth at about three Feet Diſtance, into each of which they plant two or three good Seeds, covering them about an Inch thick with Earth: then they move the Line four Feet farther, continuing to do the ſame through the whole Spot of Ground, ſo that the Rows may be four Feet aſunder, and the Hills in the Rows at three Feet Diſtance. Six Quarts of this Seed are generally allow'd to an Acre of Ground, which, if the Soil be good, will commonly produce fifty Buſhels of Corn.

If, in the planting of this Corn, you obſerve to put the Grains of any one Colour in a Field by itſelf, and no other coloured Grain ſtand near it, it will produce all of the ſame Colour again (as hath been affirm'd by ſeveral curious Perſons in that Country): but if you plant them in Rows of the different Colours alternately, they will interchange, and produce a Mixture of all the Sorts in the ſame Row, and frequently on one and the ſame Spike. Nay, it is affirm'd, that they will mix with each other at the Diſtance of three or four Rods, provided there be no tall Fence or Building between to intercept them.

There is nothing more obſerv'd in the Culture of this Plant, but only to keep it clean from Weeds, by frequent hoeing the Ground; and, when the Stems are advanced, to draw the Earth up in an Hill about each Plant; which, if done after a Shower of Rain, will greatly ſtrengthen them, and preſerve the Ground about their Roots moiſt a long time.

When the Corn is ripe, they cut off the Stems cloſe to the Ground;

and after having gather'd off the Spikes of Corn, they ſpread the Stalks to harden and dry, which they afterward uſe for covering of Sheds, *&c.* for which Purpoſe it is very uſeful to the Inhabitants of the warm Parts of *America*, as alſo for feeding their Cattle, while green, which is what they often uſe, when other Fodder is ſcarce.

But notwithſtanding this Plant at preſent is only cultivated as a Curioſity in *England*, yet it is probable it might be propagated with Succeſs, and become a Piece of good Huſbandry in ſuch Places where Beans will not ſucceed; as particularly in light ſandy Lands (where the Inhabitants are at a great Loſs for hearty Fodder for their Cattle), upon which Land this Plant will ſucceed extremely well, and ſupply the Want of Beans, perhaps better than any other Plant. The ſmall Sort is what I would recommend to be ſown in *England*, which is what the Inhabitants of *North-America* cultivate; and this will perfect its Seeds in leſs than four Months from ſowing, as I have ſeveral times experienced; and, even in ſome of the moſt unfavourable Years, it has ripen'd in full four Months from ſowing.

This Sort of Corn is much cultivated in ſeveral Parts of *Germany*, where the Inhabitants uſe it to make Bread; as alſo boil and roaſt the Grain, making ſeveral Diſhes of it: but this is not eſteemed very wholſome, nor will it agree with weak Stomachs.

In *Italy*, *Turky*, and many other Countries, this Sort of Grain is cultivated in plenty; and is the Food of moſt of the poorer Sort of People; but eſpecially where there is a Scarcity of Wheat and Rice: and till Rice was cultivated in *Carolina*, Mays was the Support of moſt of the Inhabitants in the *Britiſh* Northern Colonies.

In cultivating this Plant in *England*, the Ground ſhould be well plowed and dreſſed, and the Rows of Corn placed four or five Feet aſunder, and about two Feet aſunder in the Rows; ſo that with an Horſehoeing-plough the Ground may be often ſtirred, whereby the Weeds will be intirely deſtroyed; which if duly obſerved while the Plants are young, there will be no Occaſion to repeat it, after they are grown up to a pretty good Height; for then the Plants will prevent the Growth of Weeds, by overſhadowing the Ground.

The beſt time to plant theſe Seeds is in the Beginning of *April*, when the Weather is ſettled; for if it be ſown too ſoon, the cold Nights and wet Weather often deſtroy the Seeds; and if it be ſown too late, and the Autumn ſhould prove bad, it would not ripen well.

The large Sort, when cultivated as a Curioſity, ſhould be ſown upon a moderate Hot-bed in the Beginning of *March*; and in the Middle of *April* they ſhould be carefully tranſplanted where they are to remain; and if the Seaſon proves favourable, the Seeds will ripen very well: but without being thus early raiſed, this Sort ſeldom perfects the Grain in this Country. This Sort will grow ten or twelve Feet high in good Ground.

MEADIA, The *American* Cowſlip, *vulgo.*

The *Characters* are;

The Empalement is of one Leaf, which is cut into five oval Sections, which are reflexed: the Flower is alſo of one Leaf, which is deeply cut into five Sections: theſe are alſo reflexed back to the Tube, which is cylindrical, and cloſely embraces the Ovary, which is attended by five ſhort Stamina, *included in the Tube:*

the Ovary afterward becomes an oval Seed-veſſel, having one Cell opening in two Parts, and containing many ſmall Seeds.

There is but one *Species* of this Plant at preſent known; *viz.*

Meadia. *Catesb. Hiſt. Carolin. App.* Meadia, or *American* Cowſlip.

This Plant was many Years ſince growing in the Garden of the Biſhop of *London* at *Fulham*, where it paſſed under the Title of *American* Cowſlip; which Name I have here continued to it, though it is a very improper one, for want of a better *Engliſh* Name. The Plant was for ſeveral Years loſt in *England*, and hath lately been retrieved by Mr. *Peter Collinſon*, who procured the Seeds from Mr. *John Bartram*, who gathered them beyond the *Apalatchian* Mountains in *America*; and from the Plant which flowered in Mr. *Collinſon*'s Garden, Mr. *Catesby* has engraven a Figure, which is publiſhed in the Appendix to his *Natural Hiſtory of* Carolina, under the Title here given to it of *Meadia*, in Honour to Dr. *Richard Mead* F.R.S. and Phyſician to the King, who is a great Encourager and Patron of Arts and Sciences.

The Leaves of this Plant are ſmooth, and of a pale-green Colour, having ſeveral Indentures on their Edges. Theſe grow cloſe to the Ground in form of the Cowſlip: from between the Leaves the Flower-ſtem ariſes, which uſually grows about a Foot, being naked, and ſuſtaining at the Top many Flowers growing in an Umbel, like thoſe of the Auricula or Cowſlip. Theſe are of a purpliſh Colour, each hanging downward upon pretty long Footſtalks. The Petals of the Flowers are reflexed backward, in form of the *Cyclamen*, or Sowbread; ſo that at the firſt Appearance they have been taken for Flowers of that. After the Flowers are paſt, and the Seed-veſſels formed, the Footſtalks are reverſed, and ſtand erect.

This Plant is at preſent very rare in *Europe*, being in very few Gardens. It delights in a light moiſt Soil, and a ſhady Situation, but not under the Dropping of Trees. It is hardy in reſpect to Cold; yet, in very wet Winters, the Roots are often deſtroyed; which is frequently the Fate with many hardy *American* Plants, and is occaſioned by the frequent Alterations of the Weather in our Climate, where hard Froſts frequently follow great Rains: which kills many Plants, that are Natives of Countries, where the Winters are much more ſevere than in *England*. The Leaves of this Plant decay in the Autumn, and freſh ones are produced in the Spring; therefore the Roots muſt not be diſturbed; but if hard Froſts ſhould happen, a light Covering of Tanners Bark, Straw, or Peas-haulm, ſhould be laid over them, which will protect them from Injury.

This Plant is propagated by Seeds, which, in good Seaſons, the Plants produce in *England*: theſe ſhould be ſown in the Autumn, in Pots filled with light Earth, and placed under an Hot-bed frame, where they may be expoſed to the open Air in mild Weather, and covered with the Glaſſes to protect them from Froſt. In the Spring the Plants will come up, which, when they have obtained Strength, ſhould be tranſplanted into an Eaſt Border of light Earth; in which Situation the Plants will thrive better, than if expoſed to a greater Warmth, during the Summer-ſeaſon: but in the Autumn ſome of the Roots may be tranſplanted to a South Border, where, the

Spring following, they will produce Flowers.

MEADOW-SAFFRON. *Vide* Colchicum.

MEDICA, Medic, or La Lucerne.

The *Characters* are;

It hath a papilionaceous (or Butterfly) Flower, out of whoſe Empalement ariſes the Pointal, which afterward becomes an intorted Pod ſomewhat like a Ram's Horn, in which are lodged kidney-ſhap'd Seeds.

The *Species* are;

1. MEDICA *major erectior, floribus purpuraſcentibus. J. B.* Greater upright Medic, or La Lucerne, with purpliſh Flowers.

2. MEDICA *major erectior, floribus violaceis. Tourn.* Greater upright Medic, or La Lucerne, with violet-coloured Flowers.

3. MEDICA *major erectior, floribus luteis. Tourn.* Greater upright Medic, or La Lucerne, with yellow Flowers.

4. MEDICA *major erectior, floribus ex violaceis & luteo mixtis. Tourn.* Greater upright Medic, or La Lucerne, with violet and yellow Flowers mix'd.

Theſe Plants do not greatly differ from each other but in the Colour of their Flowers; tho' I think that with the violet-colour'd Flower produces the largeſt Leaves, and ſtrongeſt Shoots; and that with the yellow Flowers, the ſmalleſt Leaves, and weakeſt Shoots: ſo that the violet-colour'd flowering is the beſt Sort to cultivate for Fodder.

This Plant is ſuppos'd to have been brought originally from *Media*, and from thence had its Name *Medica*: it is by the *Spaniards* called *Alfaſa*; by the *French*, *La Lucerne*, and *Grande Trefle*; and by ſeveral Botanic Writers it is called *Fœnum Burgundiacum*, i. e. *Burgundian* Hay. But there is little room to doubt of this being the *Medica* of *Virgil*, *Columella*, *Palladius*, and other antient Writers of Huſbandry, who have not been wanting to extol the Goodneſs of this Fodder, and have given Direction for the Cultivation of it in thoſe Countries where they liv'd.

But notwithſtanding it was ſo much commended by the Antients, and hath been cultivated to ſo good Purpoſe by our Neighbours in *France* and *Switzerland* for many Years, it hath not as yet found Reception in our Country, in any conſiderable Quantity; tho' it is evident, it will ſucceed as well in *England* as in either of the before-mentioned Countries, being extremely hardy, and reſiſting the ſevereſt Cold of our Climate: nay, I have had the Seeds which have happened to be ſcattered upon the Ground in Autumn, come up, and endure the Cold of a ſevere Winter, and make very ſtrong Plants.

About the Year 1650. the Seeds thereof were brought over from *France*, and ſown in *England*: but whether for want of Skill in its Culture, whereby it did not ſucceed, or that the People were ſo fond of going on in their old beaten Road, as not to try the Experiment, whether it would ſucceed here, or not, was the Occaſion of its being intirely neglected in *England*, I cannot ſay. However, I hope, before I quit this Article, to give ſuch Directions for its Culture, as will encourage the People of *England* to make farther Trial of this valuable Plant, which grows in the greateſt Heat, and alſo in very cold Countries, with this Difference only, that in very hot Countries, ſuch as the *Spaniſh Weſt-Indies*, &c. where it is the chief Fodder for their Cattle at this time, they cut it every Month; whereas in cold Countries it is ſeldom cut oftener than two or three times a Year. And it is very likely, that this Plant will be of great Service to the Inhabitants of *Barbados*, *Jamaica*, and the other hot Iſlands in the *Weſt-Indies*, where one of the greateſt things they want is Fodder for their Cattle; ſince, by the Account given of this Plant by *Pere Fuillée*, it thrives exceedingly in the *Spaniſh Weſt-Indies*, particularly about *Lima*, where they cut it every Week, and bring it into the Market to ſell, and is there the only Fodder cultivated.

It is alſo very common in *Languedoc*, *Provence*, and *Dauphiné*, and all over the Banks of the *Rhone*, where it produces abundantly, and may be mowed five or ſix times in a Year. Horſes, Mules, Oxen, and other domeſtic Cattle, love it exceedingly; but above all when it is green, if they are permitted to feed on it, and eſpecially the Black Cattle, which will feed very kindly upon the dried Plant; the Exceſs of which is, by many People, thought to be very dangerous: but it is ſaid to be exceeding good for Milch Cattle, to promote their Quantity of Milk; and is alſo ſaid to agree with Horſes the beſt of all, tho' Sheep, Goats, and moſt other Cattle, will feed upon it, eſpecially when young.

The Directions given by all thoſe who have written of this Plant, are very imperfect, and generally ſuch as, if practiſed in this Country, will be found intirely wrong; for moſt of them order the mixing of this Seed with Oats or Barley (as is practiſed for Clover); but in this way it ſeldom comes up well; and if it does, it will draw up ſo weak by growing amongſt the Corn, as not to be recovered under a whole Year, if ever it can be brought to its uſual Strength again.

Others have directed it to be ſown upon a low rich moiſt Soil, which is found to be the worſt, next to a Clay, of any for this Plant; in both which the Roots will rot in Winter, and in a Year or two the whole Crop will be deſtroyed.

But the Soil in which this Plant is found to ſucceed beſt in this Country is, a light dry looſe ſandy Land, which ſhould be well plowed and harrowed, and the Roots of all noxious Weeds, ſuch as Couch-graſs, *&c.* deſtroy'd; otherwiſe theſe will overgrow the Plants while young, and prevent their Progreſs.

The beſt time to ſow the Seed is about the middle of *April*, when the Weather is ſettled and fair; for if you ſow it when the Ground is very wet, or in a rainy Seaſon, the Seeds will burſt, and come to nothing (as is often the Caſe with ſeveral of the leguminous Plants); therefore you ſhould always obſerve to ſow it in a dry Seaſon; and if there happens ſome Rain in about a Week or ten Days after it is ſown, the Plants will ſoon appear above ground.

But the Method I would direct for the ſowing theſe Seeds, is as follows: After having harrowed the Ground very fine, you ſhould make a Drill quite acroſs the Ground about half an Inch deep, into which the Seeds ſhould be ſcattered very thin; then cover them over about half an Inch thick, or ſomewhat more, with the Earth; then proceed to make another Drill about two Feet from the former, ſowing the Seeds therein in the ſame manner as before, and ſo proceed through the whole Spot of Ground, allowing two Feet Diſtance between Row and Row, and ſcatter the Seeds very thin in the Drills.

In this manner, an Acre of Land will require about ſix Pounds of Seeds; for when it is ſown thicker, if the Seed grows well, the Plants will be ſo cloſe as to ſpoil each other in a Year or two, the Heads of them growing to a conſiderable Size, as will alſo the Roots, provided they have room. I have meaſured the Crown of one Root, which was in my Poſſeſſion, eighteen Inches Diameter; from which I cut near four hundred Shoots at one time, which is an extraordinary Increaſe; and this upon a poor dry gravelly Soil, which had not been dung'd for many Years; but the Root was at leaſt ten Years old; ſo that if this Crop be well cultivated, it will continue many Years, and be equally as good as when it was firſt ſown: for the Roots generally run down very deep in the Ground, provided the Soil be dry; and altho' they ſhould meet an hard Gravel a Foot below the Surface, yet their Roots would penetrate it, and make their Way downward, as I have experienced, having taken up ſome of them, which were above a Yard in Length, and had run above two Feet into a Rock of Gravel, which was ſo hard as not to be looſened without Mattocks, and Crows of Iron, and that with much Difficulty.

The Reaſon for directing this Seed to be ſown in Rows is, that the Plants may have room to grow; and for the better ſtirring the Ground between them, to deſtroy the Weeds, and encourage the Growth of the Plants, which may be very eaſily effected with an Horſehoeing plough, juſt after the cutting the Crop each time, which will cauſe them to ſhoot again in a very little time, and be much ſtronger than in ſuch Places where the Ground cannot be ſtirred: but you can't pretend to uſe a Plough the firſt Seaſon amongſt it, until the Plants have taken good Roots in the Ground; therefore when they firſt come up, the Ground between ſhould be hoed: and if in doing of this you cut up the Plants where they are too thick, it will cauſe the remaining to be much ſtronger. This Hoeing ſhould be repeated two or three times while the Plants are young, according as the Weeds are produced, obſerving always to do it in dry Weather, that the Weeds may the better be deſtroyed; for if it be done in moiſt Weather, they will root and grow again.

With this Management, the Plants will grow to the Height of two Feet or more by the Beginning of *Auguſt*, when the Flowers will begin to appear; at which time it ſhould be cut, obſerving to do it in a dry Seaſon, and keep it often turn'd, that it may ſoon dry, and be carried off the Ground; for if it lie long upon the Roots, it will prevent their ſhooting again. After the Crop is taken off, you ſhould ſtir the Ground between the Rows with an Hoe, to kill the Weeds, and looſen the Surface; which will cauſe the Plants to ſhoot again in a ſhort time, ſo that by the Beginning of *September* there will be Shoots four or five Inches high; when you may turn in Sheep upon it to feed it down, for it will not be fit to cut again the ſame Seaſon; nor ſhould the Shoots be ſuffered to remain upon the Plants, which would decay when the froſty Weather comes on, and fall down upon the Crown of the Roots, and prevent their ſhooting early the ſucceeding Spring.

So that the beſt Way is to feed it until *November*, when it will have done ſhooting for that Seaſon: but it ſhould not be fed by large Cattle the firſt Year, becauſe the Roots, being

being young, would be in Danger of being deſtroyed, either by their trampling upon them, or their pulling them out of the Ground: but Sheep will be of Service to the Roots by dunging the Ground, provided they do not eat it too cloſe, ſo as to endanger the Crown of the Roots.

The Beginning of *February*, the Ground between the Roots ſhould be again ſtirred with the Hoe-plough, to encourage them to ſhoot again; but in doing of this you ſhould be careful not to injure the Crown of the Roots, upon which the Buds are at that time very turgid, and ready to puſh. With this Management, if the Soil be warm, by the Beginning of *March* the Shoots will be five or ſix Inches high; when, if you are in want of Fodder, you may feed it down till a Week in *April*: after which it ſhould be ſuffered to grow for a Crop, which will be fit to cut the Beginning of *June*; when you ſhould obſerve to get it off the Ground as ſoon as poſſible, and ſtir the Ground again with the Plough, which will forward the Plants ſhooting again; ſo that by the Middle or Latter-end of *July* there will be another Crop fit to cut, which muſt be managed as before: after which, it ſhould be fed down again in Autumn; and as the Roots by this time will have taken deep Hold in the Ground, ſo there will be little Danger of hurting them, if you ſhould turn in larger Cattle; but you muſt always obſerve not to ſuffer them to remain after the Roots have done ſhooting, leſt they ſhould eat down the Crown of the Roots below the Buds; which would conſiderably damage, if not deſtroy them.

In this manner you may continue conſtantly to have two Crops to cut, and two Feedings upon this Plant: and in good Seaſons there may be three Crops cut, and two Feedings; which will be a great Improvement, eſpecially as this Plant will grow upon dry barren Soils, where Graſs will come to little, and be of great Uſe in dry Summers, when Graſs is often burnt up. And as it is an early Plant in the Spring, ſo it will be of great Service when Fodder falls ſhort at that Seaſon; when it will be fit to feed at leaſt a Month before Graſs or Clover; for I have had this Plant eight Inches by the tenth of *March*, at which time the Graſs in the ſame Place has ſcarcely been one Inch high.

That the Cold will not injure this Plant, I am fully ſatisfied; for in the very cold Winter *Anno* 1728-9. I had ſome Roots of this Plant which were dug up in *October*, and laid upon the Ground in the open Air till the Beginning of *March*; when I planted them again, and they ſhot out very vigorouſly ſoon after; nay, even while they lay upon the Ground, they ſtruck out Fibres from the Underſide of the Roots, and had begun to ſhoot green from the Crown of the Roots. But that Wet will deſtroy the Roots, I am fully convinced; for I ſowed a little of the Seed upon a moiſt Spot of Ground for a Trial, which came up very well, and flouriſhed exceedingly during the Summer-ſeaſon; but in Winter, when the great Rains fell, the Roots began to rot at Bottom, and before the Spring were moſt of them deſtroyed.

The beſt Places to procure the Seed from, are *Switzerland*, and the Northern Parts of *France*, which ſucceed better with us than that which comes from a more Southern Climate: but this Seed may be ſaved in *England* in great Plenty; in order to which, a ſmall Quantity of the Plants ſhould be ſuffered to grow uncut till the Seeds are ripe; when it muſt be cut, and laid to dry in an open Barn where the Air may freely paſs through: but the Seed muſt be defended from the Wet; for if it be expos'd thereto, it will ſhoot while it remains in the Pod, whereby it will be ſpoil'd. When it is quite dry, it muſt be threſhed out, and cleanſed from the Huſk, and preſerved in a dry Place till the Seaſon for ſowing it: and this Seed ſaved in *England* is much preferable to any brought from abroad, as I have ſeveral times experienced; the Plants produced from it having been much ſtronger than thoſe produced from *French*, *Helvetian*, and *Turky* Seeds, which were ſown at the ſame time, and on the ſame Soil and Situation.

I am inclinable to think, that the Reaſon of this Plant not ſucceeding, when it has been ſown in *England*, has either been occaſioned by the ſowing it with Corn, with which it will by no means thrive (for tho' the Plant be very hardy when grown pretty large, yet at its firſt coming up, if it be incommoded by any other Plants or Weeds, it ſeldom does well; therefore it ſhould always be ſown by itſelf, and carefully cleared from Weeds until it has Strength, after which it is not eaſily deſtroyed); or perhaps People have ſown it at a wrong Seaſon, or in wet Weather, whereby the Seeds have rotted, and never come up, which hath diſcouraged their attempting it again: but however the Succeſs has been, I dare aver, that if the Method of ſowing and managing of this Plant, which is here laid down, be duly followed, it will be found to thrive as well as any other Sort of Fodder now cultivated in *England*, and will continue much longer; for if the Ground be duly ſtirred between each Crop, and the laſt Crop fed, as hath been directed, the Plants will continue in Vigour twenty Years or more without renewing, provided they are not permitted to ſeed, which will weaken the Roots more than four times cutting it would do.

The Hay of this Plant ſhould be kept in cloſe Barns, it being too tender to be kept in Ricks open to the Air as other Hay; but it will remain good, if well dried before it be carried in, three Years. The People abroad reckon an Acre of this Fodder ſufficient to keep three Horſes all the Year round.

And I have been aſſured by Perſons of undoubted Credit, who have cultivated this Plant, that three Acres of it have fed ten Cart-horſes from the End of *April* to the Beginning of *October*, without any other Food, tho' they have been conſtantly worked. Indeed the beſt Uſe which can be made of this Graſs is, to cut it, and give it green to the Cattle: where this hath been done daily, I have obſerved, that by the time the Field has been cut over, that Part which was the firſt cut, hath been ready to cut again; ſo that there has been a conſtant Supply in the ſame Field, from the Middle of *April* to the End of *October*: when the Seaſon has continued long mild, and when the Summers have proved ſhowery, I have known ſix Crops cut in one Seaſon: but in the drieſt Seaſons there will be always three. When the Plant begins to flower, it ſhould then be cut; for if it ſtands longer, the Stalks will grow hard, and the Under-leaves will decay; ſo that the Cattle will not greedily devour it. Where there is a Quantity of this Graſs cultivated, ſome of it ſhould be cut before the Flowers appear; otherwiſe there will be too much to cut within a proper time.

When this is made into Hay, it will require a great deal of making; for as the Stalks are very ſucculent, ſo it muſt be often turned, and expoſed a Fortnight before it will be fit to houſe; for this requires a longer time to make than St. Foin; but it is not ſo profitable for Hay, as to cut green for feeding of all Sorts of Cattle, but eſpecially Horſes, which are extremely fond of it; and to them it will anſwer the Purpoſe of both Hay and Corn; and they may be worked at the ſame time juſt as much as when they are fed with Corn, or dry Food.

MEDICA COCHLEATA, Snail-trefoil.

The *Characters* are;

Theſe Plants differ from the former in the Fruit, which of theſe Kinds are ſhap'd like a Snail.

There are great Numbers of Sorts of this Plant, which are preſerved in Botanic Gardens for Variety; but I ſhall in this Place only mention two or three of the moſt curious Sorts, which are cultivated in Gardens for the Oddneſs of their Fruit.

The *Species* are;

1. Medica *ſcutellata. J. B.* The Snail-trefoil, commonly called in the Seed-ſhops Snails.
2. Medica *orbiculata. J. B.* Flat round Snail-trefoil.
3. Medica *cochleata ſpinoſa, echinis magnis, utrinque turbinatis, cum ſpinulis reflexis. Raii Hiſt.* Prickly cochleated Medic, with a large Head turbinated on every Side with reflexed Spines, commonly called Horns and Hedghog.
4. Medica *marina. Lob. Icon.* Sea Medic, or Snail-trefoil.

The two firſt Sorts are common in the *Engliſh* Gardens, their Seeds being frequently ſold in the Seed-ſhops in *London*; but the third Sort is pretty rare at preſent in *England*.

Theſe three Sorts may be propagated by ſowing their Seeds upon a warm dry Border the Beginning of *April*, obſerving always to do it in dry Weather; for if the Ground be very wet, or there ſhould happen much Rain ſoon after they are put into the Earth, it very often burſts, and deſtroys the Seeds; but if ſome gentle Showers fall about a Week or ten Days after the Seeds are ſown, it will bring up the Plants in a ſhort time after. When they are come up, they ſhould be carefully cleared from Weeds, and thinned out to about a Foot aſunder, or more (for they muſt remain where they were ſown, ſeldom ſucceeding when tranſplanted); and after this they will require no farther Care but only to keep them clear from Weeds; and in *July* they will flower, and their Fruit will ripen in a ſhort time after. When the Plant is in full Beauty, the firſt Sort, at a ſmall Diſtance, will appear as if it had a great Number of Snails upon it; and the third Sort, having large rough Heads, will make a very good Appearance: for which ſingular Oddneſs, a good Garden ſhould always have a few Plants of each Sort, eſpecially ſince they require very little Care to cultivate them.

When the Fruit is full-ripe, it ſhould be gathered and laid by in a dry Place for the Seeds; for if they are permitted to remain upon the Plants, and there ſhould Rain happen, the Seeds would ſprout in the Heads, and be deſtroyed.

The fourth Sort is a perennial Plant, which is preſerved by ſuch Perſons as are very curious in collecting great Variety of odd plants. This may be propagated by ſowing the Seeds, as the former or by planting Cuttings during any of the Summer months, which, if watered and ſhaded, will take Root in a ſhort time; after which they muſt be planted in Pots fill'd with ſandy Earth, and ſheltered in Winter under an Hot-bed-frame, where they may have a great Share of free Air in mild Weather, and only require to be ſcreened from hard Froſt. This Plant is preſerved for the beautiful Whiteneſs of its Leaves, which, when intermixed with other low Plants, makes a pretty Variety.

MEDICAGO, Moon trefoil.

The *Characters* are;

It hath a papilionaceous Flower, out of whoſe Empalement ariſes the Pointal, which afterward becomes a plain orbiculated Fruit, ſhaped ſomewhat like an Half-moon; in which are contained kidney-ſhap'd Seeds.

The *Species* are;

1. Medicago *annua, trifolii facie. Tourn.* Annual Moon-trefoil, with the Appearance of Trefoil.

2. Medicago *vulnerariæ facie, Hiſpanica. Tourn. Spaniſh* Moon-trefoil, with the Appearrnce of *Vulneraria.*

3. Medicago *trifolia fruteſcens incana. Tourn.* Shrubby three-leav'd hoary Moon-trefoil, by many ſuppoſed to be the true Cytiſus of *Virgil.*

The two firſt Sorts are annual Plants, which are preſerved in Botanic Gardens for Variety, more than any ſingular Beauty or Uſe: theſe may be propagated by ſowing their Seeds in the Beginning of *April* upon a Bed of light Earth, in the Places where they are to remain; and when they come up, they ſhould be cleared from Weeds, and thinn'd to the Diſtance of a Foot aſunder, after which they will require no farther Care, but only to keep them clear from Weeds; and in *July* they will flower, and their Seeds will be perfected in *September.* The Seed-veſſels of theſe Plants being ſhaped like Half-moons, is the only remarkable Difference between them and the Medica's.

The third Sort grows to be a ſtrong Shrub, and will riſe to the Height of five or ſix Feet, and may be reduced to a regular Head, when it will appear very beautiful: but it ſhould not be cut too often, which would prevent its Flowering; for if the Shoots are permitted to grow without much Trimming, they will produce Flowers moſt Part of the Year, which, together with the Beauty of its ſilver-coloured Leaves, renders it worthy of a Place in every good Garden.

This Plant may be propagated by ſowing the Seeds, either upon a moderate Hot-bed, or a warm Border of light Earth, in the Beginning of *April*; and when the Plants come up, they ſhould be carefully cleared from Weeds; but they ſhould remain undiſturbed, if ſown in the common Ground, till *September* following; but if on an Hot-bed, they ſhould be tranſplanted about *Midſummer* into Pots, placing them in the Shade until they have taken Root: after which they may be removed into a Situation where they may be ſcreened from ſtrong Winds; in which they may abide till the Latter-end of *October*, when they muſt be put into a Frame, in order to ſhelter them from hard Froſts; for thoſe Plants which have been brought up tenderly, will be liable to ſuffer by hard Froſts, eſpecially while they are young. In *April* following theſe Plants may be ſhaken out of the Pots, and placed into the full Ground where they are deſigned to remain, which ſhould be in a light Soil, and a warm Situation,

ation, in which they will endure the Cold of our ordinary Winters extremely well, and continue to produce Flowers the greateſt Part of the Year.

Thoſe alſo which were ſown in an open Border may be tranſplanted in *September* following in the ſame manner: but in doing of this, you muſt be careful to take them up with a Ball of Earth to their Roots, if poſſible; as alſo to water and ſhade them until they have taken Root; after which they will require little more Care than to keep them clear from Weeds, and to prune their Heads once a Year, *i. e.* about the Beginning of *July*, in order to reduce them to a regular Figure: but you ſhould never prune them early in the Spring, nor late in the Autumn; for if Froſt ſhould happen ſoon after they are pruned, it will deſtroy the tender Branches, and, many times, the whole Plant is loſt thereby.

Theſe Plants have been conſtantly preſerved in the Green-houſe, ſuppoſing them very tender: but I have had large Plants of this Kind, which have remained in the open Air in a warm Situation many Years without any Cover, and have been much ſtronger, and flowered better, than thoſe which were houſed; tho' indeed, it will be proper to keep a Plant or two in Shelter, leſt by a very ſevere Winter (which ſometimes happens in *England)* the Plants abroad ſhould be deſtroyed.

They may alſo be propagated by Cuttings which ſhould be planted in *April*, upon a Bed of light Earth, and watered and ſhaded until they have taken Root; after which they may be expoſed to the open Air; but they ſhould remain in the ſame Bed till *September* following, before they are tranſplanted; by which time they will have made ſtrong Roots, and may be then removed with Safety to the Places where they are to remain, obſerving (as was before directed) to water and ſhade them until they have taken Root: after which you may train them up with ſtrait Stems, by faſtening them to Sticks, otherwiſe they are apt to grow crooked and irregular; and when you have got their Stems to the Height you deſign them, they may then be reduced to globular Heads; and, with pruning their irregular Shoots every Year, they may be kept in very good Order.

This Plant grows in great Plenty in the Kingdom of *Naples*, where the Goats feed upon it, with whoſe Milk the Inhabitants make great Quantities of Cheeſe: it alſo grows in the Iſlands of the *Archipelago*, where the *Turks* uſe the Wood of theſe Shrubs to make Handles for their Sabres; and the *Calogers* of *Patmos* make their Beds of this Wood.

This is, as hath been before obſerved, by many People ſuppoſed to be the Cytiſus of *Virgil*, *Columella*, and the old Writers in Huſbandry, which they mention as an extraordinary Plant, and worthy of Cultivation for Fodder; from whence ſeveral Perſons have recommended it as worth our Care in *England*. But however uſeful this Plant may be in *Crete*, *Sicily*, *Naples*, or thoſe warmer Countries, yet I am perſuaded it will never thrive in *England*, ſo as to be of any real Advantage for that Purpoſe; for in ſevere Froſt it is very ſubject to be deſtroyed, or at leaſt ſo much damag'd as not to recover its former Verdure before the Middle or Latter end of *May*; and the Shoots which are produced, will not bear cutting above once in a Summer, and then will not be of any conſiderable Length; and the Stems, growing very woody, will render the cutting of it very troubleſome: ſo that, upon the Whole, it can never anſwer the Trouble and Expence in cultivating it; nor is it worth the Trial, ſince we have ſo many other Plants preferable to it; tho' in hot dry rocky Countries, where few other Plants will thrive, this may be cultivated to great Advantage, ſince in ſuch Situations this Plant will live many Years, and thrive very well.

But however unfit this may be for ſuch Uſes in *England*, yet for the Beauty of its hoary Leaves, which will abide all the Year, together with its long Continuance in Flower, it deſerves a Place in every good Garden, where, being intermixed with Shrubs of the ſame Growth, it makes a very agreeable Variety.

MEDLAR. *Vide* Meſpilus.

MELAMPYRUM, Cow-wheat.

The *Characters* are;

The Leaves grow oppoſite by Pairs: the Flower conſiſts of one Leaf, is of an anomalous perſonated Figure, and divided into two Lips; the uppermoſt of which has a Spur, but the under one is intire: the Fruit is round, and divided into two Cells, containing Seeds reſembling Grains of Wheat.

The *Species* are;

1. MELAMPYRUM *luteum latifolium. C. B. P.* Yellow broad-leav'd Cow-wheat.

2. MELAMPYRUM *luteum anguſtifolium. C. B. P.* Narrow-leav'd yellow Cow-wheat.

3. MELAMPYRUM *coma purpuraſcente. C. B. P.* Cow-wheat with purpliſh Tops.

The two firſt Sorts are very common in Woods, and ſhady Places, growing near the Foot of Trees in divers Parts of *England*, and are never cultivated in Gardens.

The third Sort is very rarely found wild in *England*, except in *Norfolk*; where, in ſome of the ſandy Lands, it is often found wild: but in *Weſt-Friſeland* and *Flanders* it grows very plentifully among the Corn; and *Cluſius* ſays, it ſpoils their Bread, making it dark; and that thoſe who eat of it, uſed to be troubled with Heavineſs of the Head, in the ſame manner as if they had eaten Darnel or Cockle: but Mr. *Ray* ſays, he has eaten of this Bread very often, but could never perceive, that it gave any diſagreeable Taſte, or that it was accounted unwholſome by the Country-people, who never endeavour to ſeparate it from the Corn: and *Tabernæmontanus* declares, He has often eaten it without any Harm; and ſays, it makes a very pleaſant Bread. It is a delicious Food for Cattle, particularly for fattening of Oxen and Cows: for which Purpoſe it may be cultivated in the ſame manner as hath been directed for the *Fagopyrum*, or Buck-wheat: it loves a light ſandy Soil.

MELASTOMA, The *American* Gooſberry-tree, *vulgo*.

The *Characters* are;

The Empalement of the Flower is of one Leaf, ſwelling like a Bladder: the Flower is compoſed of five roundiſh Petals, which are inſerted in the Border of the Empalement: in the Centre is ſituated the Pointal, attended by ten Stamina, *ſupporting oblong Summits, which are erect: the Pointal afterward changes to a pulpous Berry, having five Cells, which are filled with ſmall Seeds.*

The *Species* are;

1. MELASTOMA *foliis ovato-lanceolatis crenatis, nervis quinque longitudinalibus,*

tudinalibus, extimis obſoletioribus. Lin. Hort. Cliff. American Gooſberry-tree, with oval ſpear-ſhaped Leaves having five longitudinal Veins.

2. Melastoma *foliis ovato-lanceolatis integerrimis ſubtus ſericeis, nervis ante apicem coeuntibus. Lin. Hort. Cliff. American* Gooſberry-tree, with whole oval ſpear-ſhaped Leaves, having three Veins which join beſore they reach the End of the Leaves.

3. Melastoma *foliis lanceolatis utrinque glabris, nervis tribus ante baſin coeuntibus. Lin. Hort. Cliff. American* Gooſberry-tree, with ſpear-ſhaped Leaves, ſmooth on both Sides, and three Veins joining before they reach the Bottom.

4. Melastoma *foliis lanceolatis, nervis tribus longitudinalibus ſubtus glabris coloratis. Lin. Hort. Cliff. American* Gooſberry-tree, with ſpear-ſhaped Leaves, having three longitudinal Veins, and ſmooth on their Under-ſide.

5. Melastoma *quinquenervia hirta major, capitulis ſericeis villoſis. Burm. Zeyl.* Greater hairy *American* Gooſberry-tree, with Leaves having five Veins, and the Heads covered with a ſilky Down.

6. Melastoma *foliis oblongo-ovatis acuminatis, ſubtus niveis, nervis quinque longitudinalibus, floribus umbellatis. American* Gooſberry-tree, with oblong oval-pointed Leaves, white on their Under-ſide, and three longitudinal Veins, the Flowers growing in an Umbel.

7. Melastoma *hirſutiſſima, foliis acutis, ſubtus aureis, nervis quinque longitudinalibus, fructu verticillato.* The moſt hairy *American* Gooſberry-tree, with pointed Leaves which are of a gold Colour on their Under-ſide, having five longitudinal Veins, and the Fruit growing in Whorles round the Stalks.

Theſe Plants are Natives of the warmeſt Parts of *America*, and ſome of them alſo grow in *India*. Moſt of theſe grow upon the Mountains in the Iſlands of *Jamaica*, and in the *Braſils*; but I do not find, that the Fruit are eaten by the Inhabitants of thoſe Places.

The Title of this Genus was given by Profeſſor *Burman* of *Amſterdam*, in the *Theſaurus Zeylanicus*: ſome of theſe Plants have been titled *Sambucus*; others *Chriſtophoriana*: and to ſome of the Species Dr. *Plukenet* gave the Title of *Acidendron*: but Sir *Hans Sloane*, and Father *Plumier*, have given them the Title of *Groſſularia*; from whence I have applied the *Engliſh* Name of Gooſberry to them, which is the Name by which ſome of them are known in *America*.

The firſt Sort riſes about four or five Feet high; the Stem and Branches being covered with a ruſſet Down: the Leaves are placed on the Branches by Pairs, growing oppoſite, upon pretty long Footſtalks: theſe Leaves are alſo covered with the ſame ruſſet Down, and having five Ribs or Veins running thro' the Leaves from End to End, with ſmall tranſverſe Ribs: the Fruit is produced at the End of the Shoots, which is a pulpy blue Berry, as large as a Nutmeg.

The ſecond Sort grows to be a large Tree, having many crooked Branches, covered with a brown Bark: the Leaves are placed alternately on the Branches: theſe Leaves are ſmooth, intire, and above five Inches long, and two broad in the Middle, with three deep Veins running thro' them: the Upper-ſide of theſe Leaves are of a fine Green, and ſmooth; but the Under-ſide is covered with a ſoft white *Lanugo* or Down, which makes a fine Appearance.

The third Sort grows to the Height of twenty Feet, with a large Trunk, covered with a ruſſet ſmooth Bark: the Leaves of this Tree are very large, of a light-green Colour on their Upper-ſide, but white underneath: theſe are placed by Pairs on the Branches, and make a beautiful Appearance when the Trees are viewed at a Diſtance.

The fourth Sort ſeldom grows more than eight or ten Feet high: the Leaves are about four Inches long, having three Veins running the whole Length: the Under-ſide of them are of a Gold-colour, and ſmooth: theſe are placed by Pairs on the Branches.

The fifth Sort ſeldom riſes above four Feet high; the Stalks are angular, and covered with a ruſſet Down: the Leaves have alſo the ſame Down growing on their Under-ſide: theſe are placed by Pairs on the Branches.

The ſixth Sort grows to the Height of twenty Feet or more, with a ſtrait Trunk: the Leaves are very large, and of a beautiful Silver-colour on their Under-ſide: theſe are placed by Pairs on the Branches: the Flowers come out at the Extremity of the Branches, in form of an Umbel: theſe are not larger than a ſmall Nut, and of a bluiſh Colour.

The ſeventh Sort grows about ten or twelve Feet high; the Branches, Stem, and Leaves, being covered with a ruſſet *Lanugo* or Down: theſe Leaves are about three Inches long, and one and an half broad; having five Veins running the Length of the Leaves: the Fruit of this is produced in Whorles round the Branches.

All theſe Plants are eſteemed by thoſe who are curious, for the ſingular Beauty of their Leaves; which make a fine Appearance, when viewed growing on the Plants: ſome of theſe Leaves are fourteen Inches long, and upward of four Inches broad; and moſt of them are either white, ruſſet, or yellow, on their Under-ſide; ſo that the different Colours of the two Sides of the Leaves make an agreeable Variety. There are many more Sorts of this Tree than I have here enumerated, which have been diſcovered by ſome curious Perſons in the *Spaniſh Weſt-Indies*; from whence I have received dried Samples: but as many of them were gathered imperfect, and not well preſerved, they are not very diſtinguiſhable.

There are very few of theſe Plants at preſent in any of the *European* Gardens; which may have been occaſioned by the Difficulty of bringing over growing Plants from the *Weſt-Indies*: and the Seeds, being ſmall when they are taken out of the Pulp, ſoon become dry; ſo never ſucceed: the beſt way to obtain theſe Plants is, to have the intire Fruits put up in dry Sand, as ſoon as they are ripe, and forwarded by the ſooneſt Conveyance to *England*: theſe ſhould be immediately taken out when they arrive, and the Seeds ſown in Pots of light Earth, and plunged into a moderate Hot-bed of Tanners Bark. When the Plants come up, and are fit to remove, they muſt be each planted into a ſmall Pot of light Earth, and plunged into the Tan-bed; and may afterward be treated in the manner directed for the *Guanabanas*; to which I ſhall deſire the Reader to turn, to avoid Repetition.

MELIANTHUS, Honey-flower.

The *Characters* are;

It hath a perennial Root, and the Appearance of a Shrub: the Leaves are like thoſe of Burnet: the Cup of the

the Flower is divided into ſeveral Parts: the Flower conſiſts of four Leaves, and is of an anomalous Figure: the Petals, or Leaves, are placed ſometimes in the Shape of a Fan, and at other times are of a conical Figure: the Ovary becomes a Fruit reſembling a Bladder four corner'd, divided into four Cells, and pregnant with roundiſh Seeds.

The *Species* are;

1. Melianthus *Africanus. H L.* The large Honey-flower, vulgarly called the Locuſt or Wild Honey.

2. Melianthus *Africanus minor fœtidus. Com. Rar.* The ſmaller ſtinking Honey-flower.

The firſt of theſe Plants is pretty common in many *Engliſh* Gardens, where it is preſerved as a Curioſity. This produces large Spikes of chocolate-colour'd Flowers in *May*; in each of which is contained a large Quantity of a black ſweet Liquor, from whence it is ſuppoſed to derive its Name.

This Plant was formerly preſerved in Green-houſes, as a tender Exotic; but if planted in a dry Soil, and a warm Situation, will endure the Cold of our ordinary Winters very well; and if, in a ſevere Froſt, the Tops of them ſhould be deſtroyed, yet the Roots will abide, and put forth again the ſucceeding Spring; ſo that there is no great Danger of loſeing it: and the Plants which grow in the open Air always flower much better than thoſe which are preſerved in the Green-houſe, as being leſs drawn, which always is hurtful to the Flowering of Plants, and many times prevents their producing any Flowers: for it rarely happens, that any of thoſe Plants of this Sort, which are placed in the Green-houſe, flower; but they are apt to draw up tall and weak; and thoſe Branches which produce Flowers generally decay ſoon after: ſo that altho' the Stems become woody, yet they are not of long Duration; but the Roots ſpread where they have room, and ſend out a great Number of Stems annually: and when the Plants grow in the full Ground, all thoſe Stems which are not injured by Froſt, ſeldom fail to flower the Spring following; ſo that the ſureſt Method to have them flower is, to cover the Shoots of theſe Plants in froſty Weather, to prevent their Tops being killed by the Cold.

This Plant may be propagated by taking off its Suckers or Side-ſhoots any time from *March* to *September*, obſerving to chooſe ſuch as are furniſhed with Fibres; and after they are planted, you muſt water and ſhade them, until they have taken Root; after which they will require no farther Care, but to keep them clear from Weeds: they may alſo be propagated by planting Cuttings, during any of the Summer-months; which, if watered and ſhaded, will take Root very well, and may afterwards be tranſplanted where they are deſigned to remain.

The ſecond Sort is leſs common than the former, and only to be found in ſome curious Collections of Plants; tho' it ſeems to be equally as hardy as the former. This produces ſmaller Spikes of Flowers; but they are much more beautiful than the former, their Flowers having a Mixture of red, green, and yellow. This flowers in *May*, and ſometimes perfects its Seeds with us, by which it may be propagated; and the Plants obtained from ſuch Seeds would be hardier than thoſe which come from abroad, or are raiſed from Slips. This may be propagated in the ſame manner as the former, and requires much the ſame Culture, tho' it is commonly preſerved in the Green-houſe: but I have ſeen Plants of this Kind which were growing in the Garden of *Charles du Bois*, Eſq; at *Mitcham* in *Surry*, under a warm Wall, which produced a greater Quantity of Flowers, and ripened their Seeds better, than any of thoſe Plants which are preſerved in the Green-houſe. This Sort commonly grows to a greater Height than the former, and its Branches become more woody.

MELILOTUS, Melilot.

The *Characters* are;

It hath a papilionaceous Flower: out of whoſe Empalement ariſes the Pointal; which afterward becomes a naked Capſule, that is not hid in the Empalement (as in Trefoil) pregnant with one or two roundiſh Seeds: to theſe Notes may be added, The Leaves grow by Threes on the Footſtalks, and the Flowers are produced in a Spike.

The *Species* are;

1. MELILOTUS *officinarum Germaniæ. C. B. P.* Common Melilot.

2. MELILOTUS *fruticoſa candida major. Mor. Hiſt.* Shrubby Melilot, with a white Flower.

3. MELILOTUS *major odorata violacea. Mor. Hiſt.* Greater ſweet-ſcented Melilot, with a violet-colour'd Flower, commonly called Sweet Trefoil, or *Lotus Urbana*.

4. MELILOTUS *corniculis reflexis, major. C. B. P.* Greater Melilot, with reflexed Horns.

5. MELILOTUS *corniculis reflexis, minor vel repens. C. B. P.* Smaller creeping Melilot, with reflexed Horns.

6. MELILOTUS *Italica, folliculis rotundis. C. B. P. Italian* Melilot, with round Leaves.

7. MELILOTUS *anguſtifolia repens, folliculis rotundis. C. B. P.* Narrow-leav'd creeping Melilot, with round ſmaller Leaves.

8. MELILOTUS *lutea minor, floribus & ſiliculis minoribus, ſpicatim & denſe diſpoſitis. Mor. Hiſt.* Smaller yellow Melilot, with ſmaller Flowers and Pods, growing in a thick Spike.

9. MELILOTUS *Meſſanenſis procumbens, folliculis rugoſis ſublongis, ſpicis florum brevibus. Raii Syn.* Trailing Melilot of *Meſſina*, with rough oblong Leaves, and ſhort Spikes of Flowers.

10. MELILOTUS *Cretica humillima humifuſa, flore albo magno. Tourn. Cor.* Low Melilot of *Crete*, with a large white Flower.

11. MELILOTUS *capſulis reni ſimilibus, in capitulum congeſtis. Tourn.* Melilot Trefoil.

The firſt Sort here mentioned is that uſed to make the Melilot Plaiſter: this is found wild in ſeveral Parts of *England*; but is generally cultivated in ſome Gardens near *London*, from whence the Markets are ſupplied with it. The ſecond Sort is by ſome ſuppos'd to be only a Variety of the firſt, differing in the Colour of its Flowers: but this is a Miſtake; for the whole Plant has a very different Appearance, the Leaves being narrower, the Stalks much taller, nor has it near ſo ſtrong a Scent. The third Sort is ſometimes uſed in Medicine, but is rarely cultivated, except in Botanic Gardens. This is placed in the Catalogue of Simples annexed to the *College Diſpenſatory*, under the Title of *Lotus urbana*, or *Lotus hortenſis odora*.

Theſe may be all cultivated by ſowing their Seeds in *March* upon a Bed of light Earth; and when the Plants are come up, they ſhould either be tranſplanted out, or hoed, ſo as to leave them eight or ten Inches aſunder, eſpecially the two firſt Sorts, which will abide two or three Years, and grow very large, obſerving to keep them clear from Weeds; and in *July* following they will flower, when they may be cut for Uſe, which will cauſe them to puſh out new Shoots, whereby the Roots will be maintained thro' the Winter, and flower in *May*, or the Beginning of *June*, the ſucceeding Year. The cutting off the Shoots will maintain the Roots much longer, than if they were permitted to ſtand till the Seeds are ripe; ſo that thoſe Roots you intend for Seeds, muſt not be depended on to ſtand a very long time.

The third Sort is an annual Plant, which may be ſown as the two former; but ſhould not be tranſplanted, but rather hoed out to the Diſtance of five or ſix Inches, and permitted to remain in the ſame Place, obſerving to keep them clear from Weeds; and they will flower in *June*, and their Seeds will be ripe in *Auguſt*.

The ſix next-mentioned Sorts are annual Plants, which grow wild in the South of *France*, and in *Italy*; from whence the Seeds of them have been procured by ſuch Perſons who are curious in Botany. Theſe Sorts are all of them preſerved in Botanic Gardens for Variety; but they are Plants of no great Beauty, nor are they uſed in Medicine. But if there were Trials made of ſome of the Kinds, I believe they might be found uſeful to ſow for feeding of Cattle, as the laſt Sort here mentioned is at preſent in divers Parts of *Europe*, which was the Reaſon of my enumerating theſe Sorts here: for as ſome of the other Sorts are very hardy, and will grow on almoſt any Soil; therefore if they are found to be equally good with the Noneſuch, they may be better worth cultivating, becauſe they are of much larger Growth; ſo conſequently will produce much more Fodder on an Acre of Land, than that will. But as I have had no Opportunity of trying if the Cattle will eat any of them, I cannot recommend them, but by way of Trial to ſuch Perſons who are curious in making theſe Sorts of Improvement.

As theſe are annual Plants, their Seeds muſt be ſown every Year; or if they are permitted to ſcatter when ripe, the Plants will come up in Autumn, and abide the Winter's Cold very well in this Country; and thoſe Plants which come up in Autumn, will grow much larger than thoſe which are ſown in the Spring, and will more certainly produce good Seeds. Therefore thoſe Perſons who are curious to preſerve their Kinds, ſhould either ſow them in Autumn ſoon after the Seeds are ripe, or permit them to ſcatter their Seeds; and the ſelf-ſown Plants may be eaſily tranſplanted where they are deſigned to grow; and they will require no farther Care, but to keep them clear from Weeds. They will all of them grow on almoſt any Soil; but they will thrive better on dry light ſandy Soil, than on a ſtiff clayey Ground.

The ſeventh Sort is an abiding Plant, which rarely produces Seeds in this Country, and is propagated by parting the Roots in the Spring. This Sort is not ſo hardy as the others; therefore ſome of the Plants ſhould be preſerved in Pots, that they may be removed into Shelter in Winter; for very hard Froſts will deſtroy them, if they are expoſed; but they muſt always have as much free Air as poſſible in mild Weather; ſo that if they are placed under a common Hot-bed frame in Winter, where the Glaſſes may be drawn off every Day in mild Weather, and only covered in hard Froſt, the Plants will thrive much better than where they are placed in a Greenhouſe.

houſe. In Summer the Plants muſt be frequently watered in dry Weather, and kept clear from Weeds, which is all the Culture they require.

The eleventh Sort, which is cultivated in the open Fields in ſeveral Parts of *Europe*, is an Inhabitant of this Kingdom; growing wild by the Sides of Paths, and on arable Land, in great Plenty every-where near *London*; and if the Seeds are permitted to ſcatter, there will be a Supply of Plants to ſtock the Ground; ſo that it often becomes a very troubleſome Weed in Gardens, and is difficult to extirpate after it hath gotten Poſſeſſion.

The Seeds of this Plant are ſown in the Spring, either alone, or with Barley; the latter of which I ſhould recommend; for as this is a low trailing Plant, it will not injure the Barley, which will get forward before theſe Plants come up; and if there doth not ariſe a great Crop of the Plant, yet being permitted to ſtand until the Barley is ripe, the Seeds of it will be ripe, and moſt of it ſcattered, by that time; and after the Corn is taken off, the Rains in Autumn will ſoon bring up the Plants, which will flouriſh all the Winter; and the Spring following will afford an early Feed for Cattle.

Where this Plant is ſown by itſelf, it muſt not be fed or mow'd, until the Seeds are ripe; for as it is an annual Plant, ſo where it is eaten, or cut down, the Roots will periſh; and if there is not a Supply of young Plants to ſucceed them, the Crop will be deſtroyed in one Seaſon. Indeed, as theſe Plants begin to flower very young, and near their Roots, ſo, before the Seeds are formed at the Extremity of the Shoots, thoſe produced near the Root will be ripe and ſcattered, from whence young Plants will come up, and ſupply the Crop; which has deceived ſome Perſons, who have thought this Plant will abide two or three Years, and produce ſeveral Crops from the ſame Root; which is a great Miſtake, for the Root periſhes annually. But as the Plants produce ſuch Quantities of Seeds at almoſt every Joint of the Stalks, it is almoſt impoſſible to deſtroy the Crop totally, if the Plants are permitted to grow to any Size, before they are fed or cut down.

The Seeds of this Plant being ſmaller than Clover-ſeeds, a leſs Quantity will ſow an Acre. If it is ſown by itſelf, there ſhould be ten Pounds allowed to an Acre; but if it is ſown with Barley, ſix Pounds will be ſufficient. When it is ſown with Barley, the Barley ſhould be firſt ſown and harrow'd; and then the Seeds of this ſhould be ſowed, and the Land rolled, which will bury this Seed deep enough.

This Plant is frequently confounded by the Farmers, and other Perſons who are ignorant in Botany, with the Hop trefoil; the Seeds of this being often intermixed with thoſe: there are ſome who are a little more curious, that diſtinguiſh this by the Name of black Seeds; yet theſe mix the Seeds of both together.

There is not a worſe Weed in Corn-land than the common Melilot, which in ſome Parts of *Cambridgeſhire* and *Suffolk* infeſts moſt of the Fields: and as the Seeds of this Plant are ripe by the time of Harveſt, the Plant being cut with the Wheat; when that is threſhed out, the Seeds of the Melilot are intermixed with the Corn; ſo that the Bread which is made with the Flour hath a ſtrong Taſte of the Melilot, than which nothing can be more diſagreeable to a Perſon who hath the leaſt Taſte : and yet this is the Caſe in whole Pariſhes, where the ignorant People are contented to go on eating of this Bread, rather than take Pains to deſtroy this Plant, which might be done in two or three Years, if they would carefully weed it out, and ſuffer no Plants to ſtand to produce Seeds.

MELISSA.

The *Characters* are;

It is a verticillate Plant, with a labiated Flower, conſiſting of one Leaf, whoſe Upper-lip is roundiſh, upright, and divided into two ; but the Under-lip is cut into three Parts : out of the Flower-cup riſes the Pointal, which is attended, as it were, with four Embryoes : theſe afterward turn to ſo many Seeds, which are roundiſh, and incloſ'd in the Flower-cup : to theſe Notes may be added, The Flowers are produced from the Wings of the Leaves ; but are not whorled quite round the Stalks.

The *Species* are;

1. Melissa *hortenſis. C. B. P.* Garden Balm.
2. Melissa *hortenſis, foliis ex luteo variegatis.* Garden Balm, with yellow variegated Leaves.
3. Melissa *Romana, molliter hirſuta & graveolens. H. R. Par.* Stinking *Roman* Balm, with ſofter hairy Leaves.

There are ſome other Species of this Plant, which are preſerved in curious Gardens for Variety : but as they are never cultivated for Uſe, I ſhall paſs them by without naming.

The firſt of theſe Sorts is cultivated in Gardens for medicinal and culinary Uſe : this is propagated by parting the Roots, either in Spring or Autumn, or by planting the Slips at about eight or ten Inches Diſtance, in Beds about four Feet wide, leaving a Path two Feet between the Beds, for the Conveniency of cleaning and watering them.

When they are firſt planted, if the Seaſon proves dry, you muſt carefully water them until they have taken Root, otherwiſe they will be ſubject to decay ; but afterward they will require no farther Care, but only to keep them clear from Weeds. At *Michaelmas* theſe Plants ſhould be tranſplanted where they are to remain, at about two Feet aſunder. Theſe Plants ſhould be tranſplanted and parted every other Year, otherwiſe their Roots will grow ſo large as to injure each other, and, for want of room, will rot and decay.

The variegated Sort makes a very pretty Appearance in the Spring-ſeaſon, while the Leaves are young ; but afterward their Beauty goes off : however, a few Plants of this Sort may be planted in large Borders for Variety.

The third Sort is a Plant of no great Beauty or Uſe ; but is preſerved in ſeveral curious Gardens for Variety. This is ſomewhat tenderer than the other, and ſhould have a dry Soil, and a warm Situation, otherwiſe it is ſometimes deſtroyed in ſevere Froſts.

The two firſt Sorts will grow in almoſt any Soil or Situation; but the ſtriped Sort ſhould not have a rank Soil, which would cauſe it to grow vigorouſly, whereby the Beauty of its variegated Leaves ſoon goes off.

MELISSA TURCICA. *Vide* Dracocephalon.

MELO, Melon.

Dr. *Linnæus* has joined the *Melo, Anguria*, and *Colocynthis*, with the *Cucumis*, making them only Species of the ſame Genus : but where the Fruit is allowed as a characteriſtic

Note, theſe cannot be joined in the ſame Genus.

Of theſe he ſuppoſes but one Species; for Inſtance, all the Melons are one; the Cucumbers but one; the Water-melons but one; nor the Bitter Gourd will he allow but one Species: but, from many Years Experience, I have found, that there are diſtinct Species of each Genus; which will conſtantly produce the ſame from Seeds: tho' I allow, that there are ſeveral accidental Varieties in each, which vary from Seed.

The *Characters* are;

The Flower conſiſts of one Leaf, which is of the expanded Bell-ſhape, cut into ſeveral Segments, and exactly like thoſe of the Cucumber: ſome of theſe Flowers are barren, not adhering to the Embryo: others are fruitful, growing upon the Embryo, which is afterward changed into a Fruit, for the moſt part of an oval Shape, ſmooth or wrinkled, and divided into three ſeminal Apartments, which ſeem to be cut into two Parts, and contain many oblong Seeds.

The *Species* are;

1. MELO *vulgaris*. C. B. P. Common Muſk Melon.

2. MELO *rotundus parvus*. C. B. P. Small round Muſk Melon, commonly called the *Portugal* or Pocket Melon.

3. MELO *reticulatus*. J. B. Netted or wrought Melon.

4. MELO *magnus, cortice virente, ſemine parvo*. J. B. Greater Muſk Melon, with a ſmooth green Skin, and a ſmall Seed.

5. MELON *Hiſpanicus, cortice albo intus rubente*. White *Spaniſh* Melon, *vulgo*.

6. MELO *cortice lævi intus virente*. The green-fleſh'd Melon, *vulgo*.

7. MELO *cortice tuberoſus*. C. B. P. The *Cantaleupe* Melon.

8. MELO *autumnalis, cortice aſpero & ſtrumoſo, dulci pulpa, Zatta dictus. Hort. Piſ.* The *Zatta* Melon.

9. MELO *cortice piloſo*. C. B. P. Melon with an hairy Skin.

10. MELO *hybernus ſuavis, cortice flavo. Hort. Piſ.* Winter Melon.

There are ſome other Varieties, which are mentioned in Botanic Books, which are not cultivated for their Fruit, but are preſerved as Curioſities in Botanic Gardens; therefore I ſhall not enumerate them here; for of thoſe here mentioned, there are not above three, which are worth cultivating; theſe are the ſecond, the ſeventh, and eighth Sorts.

The ſecond Sort was many Years known in the *Engliſh* Gardens, by the Name of *King Charles's Pocket Melon*, being a ſmall round Fruit: it might have received that Name from that Princes having carried one in his Pocket. This came to *England* from *Portugal*; but was neglected for many Years, I ſuppoſe from the Fruit being ſmall; for moſt Gardeners value this Fruit for its Size, and not for the Flavour, eſpecially thoſe who cultivate them for the Market; ſo that if a Melon is but very large, if the Fleſh is not eatable, they eſteem it; and this has occaſioned ſo great Scarcity of theſe Fruits, which are tolerable: for it is not only in *England*, but moſt Parts of *Europe*, that from the great Quantity of theſe Fruits, which are annually raiſed, not one in an hundred of them are fit to eat; the generality of Gardeners coveting to ſave the Seeds from the largeſt Fruit, without any regard to their Goodneſs. The Seeds of this ſmall Melon were ſince brought to *England* from *Portugal*, by General *Dormer*; therefore

fore ſome People call the Melon by his Name.

The ſeventh Sort is much preferable to all other; for when this is properly managed, ſcarce one in an hundred of them is bad: this Sort was brought from *Armenia*, on the Confines near *Perſia*, where the beſt Melons in the World grow; and there they are in general good, as Dr. *Tournefort* in his Travels relates: and thoſe Melons never offend the Stomach, but agree with all Perſons; and cauſe them to grow fat, who feed upon them: and they have the ſame Quality here; for Perſons who cannot bear the leaſt Piece of a common Melon on their Stomachs, can eat of theſe with Safety, as I have many times experienced. This Sort of Melon has been long cultivated at *Cantaleupe*, a little Diſtrict about ten Leagues from *Rome*, where the Gardeners have been very long famous for producing the beſt Melons in *Italy*; but of late Years thoſe Gardeners have not been careful in the Choice of their Seeds, whereby they have greatly degenerated their Melons; for if their Seeds are not collected from the beſt Fruits, they will annually grow leſs delicate. The *Dutch* Gardeners are the moſt curious at preſent in the Cultivation of this Fruit; which paſſes, all over *Holland*, by the ſimple Name of *Cantaleupe*, to diſtinguiſh it from all other Sorts of *Melon*: and they are ſo careful in preſerving the Kind good, as not to plant any other Sort of Melon, Cucumber, or Gourd, near theſe; leſt, by the Impregnation of the *Farina* of thoſe other, theſe Fruit ſhould be rendered bad: and in this Particular, I am convinced from long Experience, they are right: and from the not obſerving this, many Perſons who are Lovers of this Fruit have gradually diminiſhed their Goodneſs, without knowing the Cauſe; and have imputed it to the long cultivating from Seeds ſaved in the ſame Garden; believing it abſolutely neceſſary to procure Seeds from a diſtant Place frequently, to preſerve them good: indeed, where a Perſon can ſecurely depend on the Care and Skill of thoſe he procures the Seeds from, it is a very good Method to exchange Seeds now-and-then: but there are ſo few who are exact in making choice of the Fruits from which they ſave the Seeds, or careful enough to do it themſelves, but often depend on others to clean the Seed, that I ſhould adviſe every one to do it himſelf; which is the ſure way to have it good: for I have frequently been deceived myſelf, by depending on the Fidelity and Skill of others: nor could I procure any of theſe Seeds from *Cantaleupe*, which were good, until my much honoured Friend the Chevalier *Rathgeb* ſent me plentifully of it from thence; tho' I had often been ſupplied with Seeds by Perſons who I thought could not be deceived in their Choice, and who lived near the Place of their Growth.

The *Zatta* Melon is greatly eſteemed at *Florence*, and in ſome other Parts of *Italy*. It is a ſmall Fruit, rather flat than round; the two Ends being compreſſed: the Skin is rough, generally warted, and deeply furrowed; the Fleſh of a red Colour; but ſeldom very thick; ſo that there is not much Meat in one of theſe Melons: but as it is generally good, a few of them may be cultivated for the ſake of Variety; but the former is the Sort I would always prefer to every other.

As to all the other Sorts which are here mentioned, they are by no means to be put in Competition with theſe; for whoever has eaten of the *Cantalupe* in Perfection, will hardly be brought to reliſh any other; ſo that I ſhould not have mentioned them here, but to prepare for the Reception of theſe; and that it might not be imputed to a Defect in the Book.

Before I quit this Head, I beg Leave to caution all Perſons againſt depending upon Seeds which are brought from abroad, either by thoſe Perſons who import them for Sale, or Gentlemen who frequently bring or ſend over theſe Seeds to their Friends; for it ſeldom happens, that any of theſe prove tolerable. I have been ſo often deceived by theſe myſelf, as to determine never to make Trial of any of theſe Seeds again, unleſs I receive them from a Perſon who is ſkilful, and who eat of the Fruit himſelf, of which he ſaved the Seeds: for in *Italy*, *Spain*, *Portugal*, and in many Parts of *France*, the Gardeners are very careleſs in the Choice of all their Seeds; but of the Melons they are remarkably ſo: and as for thoſe which come from *Conſtantinople*, *Aleppo*, and other Parts of *Turky*, I have rarely ſeen one Melon produced from thoſe Seeds, which was tolerable.

The Seeds of Melons ſhould not be ſown, until they are three Years old; nor would I chooſe to ſow them, when they are more than ſix: for altho' they will grow at ten or twelve Years old, yet the Fruit which are produced from thoſe old Seeds are ſeldom ſo thick-fleſh'd, as thoſe which come from Seeds which are freſher: and it is the ſame of light Seeds, which ſwim upon Water, when they are taken out of the Pulp; for I have made ſome Trials of theſe, and have had them grow at three Years old: but not one of the Melons produced on theſe Plants was near ſo deep-fleſhed, as thoſe which grew upon Plants raiſed from heavy Seeds, taken out of the ſame Fruit; tho' they grew in the ſame Bed, and were cultivated exactly in the ſame manner: nor was their Fleſh ſo firm, but rather inclining to be mealy: therefore I would not adviſe the ſowing of theſe light Seeds, nor thoſe which are very old.

Having thus largely treated of the Choice of the Sorts, and of the Seeds, I ſhall next proceed to the Method of cultivating them, in order to obtain plenty of good Fruit: the Method which I am going to preſcribe, being very different from what has been conſtantly practiſed in *England*, will, I doubt not, be objected to by many; but it is what has been practiſed in all the good Gardens in *Holland* and *Germany*, where the *Cantalupe* Melon is produced in great Plenty and Perfection: and from ſeveral Years Experience I have found this to be the only Method in which theſe Melons can be cultivated with Succeſs: and I am likewiſe convinced of its being the beſt way to obtain plenty of any other Sort of Melon.

It is common to hear many Perſons valuing themſelves upon having two or three early Melons; which, when brought to the Table, are not ſo good as a Turnep: and theſe are procured at a great Expence, and with much Trouble: and in order to have them ripe a little earlier, than they would come, if ſuffered to grow to their full Size, the Stem upon which the Fruit grows, is commonly twiſted, to prevent the Nouriſhment entering the Fruit, whereby the Growth is checked: then the Fruit is cloſely covered with the Mowings of Graſs, laid of a ſufficient Depth to cauſe a Fermentation; by which the Fruit becomes coloured: but as this unnatural Method is practiſed, the Fruit hath little Fleſh; and that has neither Moiſture, Firmneſs, or Flavour: ſo that after four Months Attendance, with a great Expence of Dung, *&c.* there may perhaps be three or four Brace of Melons produced, which are fitter for the Dunghil than the Table: therefore my Advice is, never to attempt to have theſe Fruit ripe earlier than the middle of *June*, which is generally ſoon enough for this Climate; and from that time to the End of *September*, they may be had in plenty, if they are ſkilfully managed: and when the Autumn has continued favourable, I have had them very good in the middle of *October*.

But in order to continue this Fruit ſo long, the Seeds muſt be ſown at two different Seaſons; or if at three, it will be ſtill better: the firſt ſhould be ſown about the middle of *February*, if the Seaſon proves forward; but if it is otherwiſe, it will be better to defer it till the End of that Month; for the future Succeſs greatly depends on the raiſing the Plants in Strength; which cannot be ſo well effected, if the Weather ſhould prove ſo bad, after the Plants are come up, as that a ſufficient Quantity of freſh Air cannot be admitted to them; therefore it is not adviſeable to be too early in ſowing the Seeds.

When the Seaſon is come, theſe Seeds may be ſown on the Upperſide of a Cucumber-bed, where there are any; and if there are none, a proper Quantity of new Horſe-dung muſt be provided, which muſt be thrown in an Heap to ferment, and turned over, that it may acquire an equal Heat, in the ſame manner as hath been directed for Cucumbers; and the Plants muſt be raiſed and managed in the ſame manner as hath been directed for them, until they are planted where they are to remain for good: to which Article the Reader is deſired to turn, to avoid Repetition.

The ſecond Seaſon for ſowing of theſe Seeds is about the middle of *March*; and both theſe Sowings muſt be underſtood to be planted under Frames; for thoſe which are deſigned for Bell or Hand-glaſſes, or to be covered with Oil-papers, ſhould not be ſown till about a Week in *April*; for when theſe are ſown earlier, if the Plants are properly managed, they will grow ſo far, as to extend their Shoots to the Sides of the Glaſſes, before it will be ſafe to let them run out; for it often happens in this Country, that we have ſharp morning Froſts in the middle of *May*; ſo that if the Ends of theſe Vines are then without the Glaſſes, if they are not covered with Mats, to guard them againſt the Froſt, they will be in Danger of ſuffering greatly therefrom: and, on the other hand, if the Plants have ſpread ſo much as to fill the Glaſſes, and are not permitted to run out, they will be in equal Danger of ſuffering by their Confinement from the Sun, in the Day-time: therefore it is, that I ſhould adviſe the putting of the Seed in rather a little later for the Glaſſes, than thoſe which are to be covered with Oil-papers: nor will the times here mentioned be found too late; for I have put the Seeds of *Cantalupe* Melons into an Hot-bed the third of *May*, which were not tranſplanted, but remained where they were ſown, and covered with oiled Paper; and from this Bed I cut a large Crop of good Fruit, which ripened about the Middle of *Auguſt*, and continued till the End of *October:* this I only mention, to ſhew what has, and may be done.

But we next come to the making and preparing of the Beds, or, as the Gardeners term it, the Ridges, into which the Plants are to be put out to remain: theſe ſhould always be placed in a warm Situation, where they may be defended from all cold and ſtrong Winds; for the Eaſt and North Winds are generally very troubleſome in the Spring of the Year; ſo that if the Place is expoſed to them, it will be difficult to admit a proper Share of freſh Air to the young Plants: and if it is much expoſed to the South-weſt Winds, which often are very boiſterous in Summer and Autumn; theſe will turn up and diſplace the Vines, whereby they will ſuffer greatly; therefore the beſt Poſition for theſe Beds is, where they are open to the South, or a little inclining to the Eaſt, and ſheltered at a Diſtance by Trees from the other Points: this Place ſhould be incloſed with a good Reed-fence; which is better for this Purpoſe than any other Incloſure; becauſe the Winds are deadened by the Reeds, and are not reverberated back again, as they are by Walls, Pales, or other cloſe Fences: but in making the Incloſure, it ſhould be extended to ſuch Diſtance every Way from the Beds, as not to obſtruct the Sun's Rays during any Part of the Day: this ſhould have a Door wide enough to admit of Wheelbarrows paſſing, to carry in Dung, Earth, *&c.* And this ſhould be kept locked, that no Perſon ſhould be allowed to go in, but thoſe who have Buſineſs: for ignorant Perſons, having often Curioſity to look into the Beds, open the Glaſſes, and let the cold Air to the Plants; and frequently leave the Glaſſes, in part, open; or ſometimes, when they are raiſed by the Gardener, to admit freſh Air, the Tilts are thrown down; ſo that the Air is excluded: all which are very injurious to the young Plants, as is alſo the handling of the Fruit, after it is ſet; therefore none ſhould be admitted, but when the Perſon who is intruſted with the Care of them is there.

The next thing is the Preparation of the Earth for theſe Plants; in which the *Dutch* and *German* Gardeners are very exact: the Mixture which they generally prepare is of the following Sorts; of Hazel loam, one third Part; of the Scouring of Ditches or Ponds a third Part; and of very rotten Dung a third Part: theſe are mixed up at leaſt one Year, and often two Years, before they make uſe of it; frequently turning it over, to incorporate their Parts, and ſweeten it: but the Compoſt in which I find theſe Plants ſucceed beſt in *England*, is Two-thirds of freſh gentle Loam, and One-third of rotten Neats-dung: if theſe are mixed together one Year before it is wanted, ſo as to have the Benefit of a Winter's Froſt, and Summer's Heat; obſerving to turn it over often, and never ſuffer Weeds to grow upon it; this will be found equal to any other Compoſt whatever.

As theſe Plants ſucceed beſt when they are planted young, ſo as ſoon as the Plants appear, there ſhould be a Quantity of new Dung thrown in an Heap, proportionable to the Number of Lights intended; allowing about fifteen good Wheelbarrows full to each Light: this muſt be two or three times turned over, to prepare it (as hath been directed for Cucumbers), and in a Fortnight it will be fit for Uſe; at which time the Trench muſt be dug to receive the Dung, where the Bed is intended:

ed: this muſt be made rather wider than the Frames, and in Length proportional to the Number of Frames intended: as to the Depth, that muſt be according as the Soil is dry or wet; but in a dry Ground it ſhould not be leſs than a Foot, or a Foot and an half, deep; for the lower theſe Beds are made, the better they will ſucceed, where there is no Danger of their ſuffering by Wet: in the well laying and mixing of the Dung, the ſame Care muſt be taken, as hath been adviſed already for Cucumbers, which in every reſpect muſt be the ſame for theſe Beds, excepting that of making Holes in the Dung, where the Plants are to be placed, which ſhould not be practiſed for Melons; but the Dung laid in every Part ſmooth and even. When the Bed is made, the Frames ſhould be placed over it, to keep out Wet; but there ſhould be no Earth laid upon it, till after it has been three or four Days made, and is found of a proper Temperature of Heat: for many times theſe Beds will heat ſo violently when they are firſt made, as to burn the Earth, if covered with it: and when this happens, it is much the beſt way to take this Earth off again; for the Plants will never thrive in it.

As ſoon as the Bed is found to be of a proper Warmth, the Earth ſhould be laid upon it, which at firſt need not be more than two Inches thick, except in the middle of each Light, where the Plants are to be placed, where there muſt be raiſed an Hill, fifteen Inches high or more, terminating in a flat Cone: in two Days after the Earth is put on the Bed, it will be of a proper Temper to receive the Plants: then in the Evening you may tranſplant the Plants; but always do it when there is little Wind ſtirring: in taking up of the Plants, their Roots ſhould be carefully raiſed with a Trowel, ſo ſo as to preſerve all their Fibres; for if theſe are broken off, the Plants rarely take well; or if they recover, they are generally weaker, and never make ſo good Vines, as thoſe which are more carefully removed; for theſe Plants are more nice and tender in tranſplanting, than thoſe of Cucumber, eſpecially the *Cantaleupe* Melon; which if it is not planted out, ſoon after the third (or what the Gardeners call the rough) Leaf is put out, they are long recovering their Vigour; ſo that when it happens, that the Beds cannot be ready for them in time, it will be a good Method to plant each Plant into a ſmall Pot, while they are young; and theſe may be plunged into the Hot-bed, where they were raiſed, or into a Cucumber-bed, where there is room; ſo that they may be brought forward: and when the Bed is ready, theſe may be turned out of the Pots, with the whole Ball of Earth to their Roots; whereby they will receive no Check in removing: and this latter Method is what I ſhould prefer to any other for the *Cantaleupe*; becauſe there ſhould never be more than one Plant left to grow in each Light; therefore in this Method there will be no Neceſſity of planting more; as there will be no Danger of their ſucceeding; whereas, in the common way, moſt People plant two or more Plants in each Light, for fear ſome ſhould miſcarry. When the Plants are placed on the Top of the Hills, they ſhould be gently watered; which ſhould be repeated two or three times in a Week; but it muſt be done with great Moderation; for when they receive too much Wet, they often canker at the Root; and when that happens, they never produce good Fruit. When the Plants have eſtabliſhed themſelves well in the new Beds, they will require little more Water; but there ſhould be a greater Quantity of Earth laid on the Bed, beginning round the Hills where the Plants grow, that their Roots may have room to ſtrike out: and as the Earth is put in from time to time, it muſt be trodden or preſſed down as cloſe as poſſible; and it ſhould be raiſed at leaſt a Foot and an half thick upon the Dung, obſerving alſo to raiſe the Frames, that the Glaſſes may not be too near the Plants, leſt the Sun ſhould ſcorch them.

When the Plants have gotten four Leaves, the Top of the Plants ſhould be pinched off with the Finger and Thumb; but not bruiſed, or cut with a Knife; becauſe in either of theſe Caſes the Wound will not ſo ſoon heal over: this Pinching is to cauſe the Plants to put out lateral Branches; for theſe are what will produce the Fruit; therefore when there are two or more of theſe lateral Shoots produced, they muſt alſo be pinched, to force out more; and this muſt be practiſed often, that there may be a Supply of Runners to cover the Bed: the Management of theſe Beds muſt be nearly the ſame as hath been directed for the Cucumbers; therefore I need not repeat it here; but ſhall only obſerve, that the Melons require a greater Share of Air than Cucumbers, and very little Water; and when it is given to them, it ſhould be at a Diſtance from their Stems.

If the Plants have ſucceeded well, they will ſpread over the Bed, and reach to the Frames, in about five or ſix Weeks; at which time the Alleys between the Beds ſhould be dug out; or where there is but one Bed, there ſhould be a Trench made on each Side, of about four Feet wide, as low as the Bottom of the Bed; and hot Dung wheeled in, to raiſe a Lining to the ſame Height as the Dung of the Bed, which ſhould be trodden down cloſe; and afterward covered with the ſame Earth as was laid upon the Bed, to the Thickneſs of a Foot and an half or more, treading it down as cloſe as poſſible: this will add to the Width of the Bed, ſo much as to make it in the Whole twelve Feet broad, which is abſolutely neceſſary; for the Roots of the Plants will extend themſelves quite thro' it; and it is for want of this Precaution, that it is common to ſee the Vines of Melons decay, before the Fruit is well grown; for where there is no Addition made to the Width of the Bed, the Roots will have reached the Sides of the Beds by the time that the Fruit appears; and having no more room to extend themſelves, their Extremities are dried by the Sun and Air; which is ſoon diſcovered by the Plants hanging their Leaves in the Heat of the Day, which is ſoon attended with a Decay of many of thoſe Leaves, which are near the Stem; and the Plants from that time gradually languiſh; ſo that the Fruit cannot be ſupplied with Nouriſhment; but when ripe, will be found to have little Fleſh, and that mealy and ill-flavour'd: whereas thoſe Plants which have ſufficient Breadth for their Roots to run, and the Earth laid of a proper Depth, and cloſely trod down, will remain in Vigour until the Froſt deſtroys them; ſo that I have had a ſecond Crop of Fruit on them, which have ſometimes ripened well; but all the firſt were excellent, and of a larger Size than theſe Sorts uſually grow: the Leaves of theſe Plants were very large, and of a ſtrong Green; ſo that they were in the utmoſt Vigour:

whereas, in moſt Places where the *Cantaleupe* Melons have been raiſed in *England*, the Beds have been no wider than they were firſt made, and perhaps no more than three Inches Thickneſs of Earth upon them; ſo that the Plants have decayed many times without producing a ſingle Fruit: and from thence People have imagined, that this Sort of Melon was too tender for this Climate, when their ill Succeſs was intirely owing to their not underſtanding their Culture.

There is alſo another Advantage attending this Method of widening the Beds, as above directed; which is that of adding a freſh Warmth to the Beds, by the hot Dung which is buried on each Side; which will cauſe the Dung in the Bed to renew its Heat: and as the Plants will by this time ſhew their Fruit, this additional Heat will be of great Service in ſetting of the Fruit, eſpecially if the Seaſon ſhould prove cold, as it often happens in this Country, in the Month of *May*. When the Beds are made up in the manner here directed, and the Vines have extended ſo far as to fill the Frames, and want more room, the Frames ſhould be raiſed up with Bricks about three Inches high, to admit the Shoots of the Vines to run out from under them; for if the Plants are ſtrong, they will extend ſix or ſeven Feet each Way from their Stems; for which Reaſon I caution every one to allow them room, and to put but one Plant in each Light; for when the Vines are crouded, the Fruit ſeldom will ſet well, but will drop off when they are as large as an Egg; therefore the Frames which are deſigned for Melons ſhould not be made ſmall.

There is no Part of Gardening, in which the Practitioners of this Art differ more, than in the pruning and managing of theſe Plants; nor are there any Rules laid down in the ſeveral Books in which the Culture of Melons have been treated of, by which any Perſon can be inſtructed; for there is ſuch Inconſiſtency in all their Directions; and what is worſe, the greateſt part of them are abſurd; ſo that whoever follows them, can never hope to ſucceed: therefore I ſhall, in as few Words as poſſible, give ſuch plain Directions, as I hope will be ſufficient to inſtruct any Perſon who is the leaſt converſant in theſe Things.

I have before adviſed the pinching off the Ends of the Plants as ſoon as they have a Joint, in order to get lateral Shoots, which are by the Gardeners called Runners; and when theſe Shoots have two or three Joints, to pinch off their Tops, to force out more Runners; becauſe it is from theſe that the Fruit is to be produced; but after a ſufficient Number are put out, they ſhould not be ſtopped again; but wait for the Appearance of the Fruit, which will ſoon come out in plenty; at which time the Vines ſhould be carefully looked over three times a Week, to obſerve the Fruit, and make choice of one upon each Runner; which is ſituated neareſt the Stem; having the largeſt Footſtalk, and that appears to be the ſtrongeſt Fruit; and then pinch off all the other Fruit which may appear upon the ſame Runner; alſo pinch off the End of the Runner at the third Joint above the Fruit; and if the Runner is gently pinched at the next Joint above the Fruit, it will ſtop the Sap, and ſet the Fruit. The taking off all the other Fruit will prevent the Nouriſhment being drawn away from the Fruit intended to grow; which, if they were all left on the

Plant, could not ſupply them with ſufficient Nouriſhment; ſo that when they come to be as large as the End of a Man's Thumb, they all drop off, and ſcarce one of them ſets; which will be prevented by the Method before directed: but there are ſome Perſons, who are ſo covetous of having a Number of Fruit, as not to ſuffer any to be taken off; whereby they generally fail in their Expectation. My allowing but one Fruit to be left upon each Runner is, becauſe if half of theſe ſtand, there will be full as many Fruit as the Plant can nouriſh: for if there are more than eight upon one Plant, the Fruit will be ſmall, and not ſo well nouriſhed: indeed I have ſome times ſeen fifteen or twenty Melons upon one Plant; but theſe have generally been of the ſmaller Kinds, which do not require ſo much Nouriſhment as the *Cantaleupe*'s, whoſe Skins are of a thick Subſtance; ſo that where a greater Number are left of them, than the Plants can well ſupply, their Fleſh will be remarkably thin.

As I before adviſed the ſtopping, or pinching off, the Runners three Joints above the Fruit; ſo by this there will be freſh Runners produced a little below the Places where the others were pinched; therefore it is, that I adviſe the careful looking over the Vines ſo often, to ſtop theſe new Runners ſoon after they come out; as alſo to pull off the young Fruit which will appear; and this muſt be repeated as often as it is found neceſſary, which will be until thoſe intended to ſtand are grown ſo large as to draw all the Nouriſhment which the Plants can ſupply; for then the Plants will begin to abate of their Vigour. Theſe few Directions, if properly made uſe of, is all the Pruning which is neceſſary to be given them; but at the ſame time when this is practiſed, it may be neceſſary to give ſome Water to the Plants, but at a Diſtance from their Stems; which will be of Service to ſet the Fruit, and cauſe it to ſwell; but this muſt be done with great Caution.

The Glaſſes of the Hot-bed ſhould alſo be raiſed high, to admit a large Share of Air to the Plants, otherwiſe the Fruit will not ſet: and if the Seaſon ſhould prove very warm, the Glaſſes may be frequently drawn off, eſpecially in an Evening, to receive the Dews, provided there is little Wind ſtirring; but the Glaſſes ſhould not remain off the whole Night, leſt the Cold ſhould prove too great.

When the Plants have extended themſelves from under the Frames, if the Weather ſhould alter to Cold, it will be neceſſary to cover their Extremities every Night with Mats; for if theſe Shoots are injured, it will retard the Growth of the Fruit; and often proves very injurious to the Plants: and now what Water is given to the Plants, ſhould be in the Alleys between the Beds; for as the Roots of the Vines will by this time have extended themſelves thro' the Alleys, ſo when the Ground there is well moiſtened, the Plants will receive the Benefit of it: and by this Method the Stems of the Plants will be preſerved dry, whereby they will continue ſound: but theſe Waterings ſhould not be repeated oftener than once a Week in dry warm Weather; and be ſure to give as much Air as poſſible to the Plants, when the Seaſon is warm.

Having given full Inſtructions for the Management of thoſe Melons, which are raiſed under Frames, I ſhall next proceed to treat of thoſe which are raiſed under Bell or Hand-glaſſes. The Plants for theſe muſt be raiſed in the ſame manner as hath been already directed; and about the middle of *April*, if the Seaſon proves forward, will be a good time to make the Beds: but if the Seaſon is cold, it had better be deferr'd ſomewhat later: a ſufficient Quantity of hot Dung ſhould be provided, in proportion to the Number of Glaſſes; allowing eight or nine good Wheelbarrows of Dung to each Glaſs. If there is intended but one Bed, which is propoſed to be extended in Length, the Trench ſhould be dug out three Feet and an half wide, and the Length according to the Number of Glaſſes, which ſhould not be placed nearer than five Feet to each other from Middle to Middle; for when the Plants are too near each other, the Vines will intermix, and fill the Bed ſo cloſely, as to prevent the Fruit from ſetting: in digging of the Trench, it ſhould be ſo ſituated, as to allow for the Widening of the Bed three or four Feet on each Side; the Depth muſt be according as the Soil is dry or wet: but, as was before obſerved, if the Soil is ſo dry, as that there is no Danger of the Beds being hurt by the Wet, the lower they are made in the Ground the better: in the making of the Beds the ſame regard muſt be had to the well-mixing and laying of the Dung, as was before directed: and after the Dung is laid, there ſhould be an Hill of Earth raiſed, where each Plant is to ſtand, one Foot and an half high: the other Part of the Bed need not as yet be covered more than four Inches thick, which will be ſufficient to keep the Warmth of the Dung from evaporating: then the Glaſſes ſhould be placed over the Hills, and ſet down cloſe, in order to warm the Earth of the Hills, to receive the Plants; and if the Beds work kindly, they will be in a proper Temperature to receive the Plants, in two or three Days after making; then the Plants ſhould be removed in the ſame manner as was before directed: and if they are in Pots, ſo that there will be no Danger of their growing, there ſhould but one Plant be put under each Glaſs: and if they are not in Pots, there ſhould be two; one of which may be afterward taken away, if they both grow: theſe Plants muſt be watered and ſhaded every Day, until they have taken Root: and if the Nights prove cold, it will be proper to cover the Glaſſes with Mats, to preſerve the Warmth of the Bed.

Where there are ſeveral of the Beds intended, they ſhould be placed at eight Feet Diſtance from each other, that there may be a proper Space left between them, to be afterward filled up, for the Roots of the Vines to have room for extending themſelves, for the Reaſons before given.

When the Plants have taken good Root in the Beds, their Tops muſt be pinched off; and their Pruning, *&c.* muſt, from time to time, be the ſame as for thoſe under the Frames: in the Day-time when the Weather is warm, the Glaſſes ſhould be raiſed on the oppoſite Side to the Wind, to admit freſh Air to the Plants; for where this is not obſerved, they will draw up weak and ſickly: therefore all poſſible Care ſhould be taken, to prevent this; for if the Runners have not proper Strength, they can never ſupply the Fruit with Nouriſhment.

When the Plants are grown ſo long as to reach the Sides of the Glaſſes, if the Weather proves favourable, the Glaſſes muſt be ſet up on three Bricks, ſo as to raiſe them about two Inches from the Surface of the Beds, to give room for the Vines to run out from under them: but when this is done, the Beds ſhould be covered all over with Earth to the Depth of one Foot and an half, and trod down as cloſe as poſſible: and if the Nights ſhould prove cold, there ſhould be a Covering of Mats put over the Beds, to prevent the Cold from injuring the tender Shoots of the Vines: but as the Vines of the *Cantaleupe* Melons are impatient of Wet, it will be neceſſary to arch the Beds over with Hoops, to ſupport the Mats, that they may be ready for covering at all times when they require it; which is the only ſure Method to have theſe Melons ſucceed in *England*, where the Weather is ſo very uncertain and variable; for I have had ſome Beds of theſe Melons in as fine Order under theſe Glaſſes as could be deſired, which were totally deſtroyed by one Day's heavy Rain in *June*.

After the Thickneſs of Earth is laid upon the Beds, if the Weather ſhould prove cold, it will be adviſeable to dig Trenches on each Side of the Beds, into which you ſhould lay a ſufficient Quantity of hot Dung, to make it the ſame Thickneſs with the Bed, after the manner before directed for the Frames; or if you have a ſufficient Quantity of hot Dung ready, the whole Space between the Beds may be dug out, and filled up with the Dung, laying thereon the Earth a Foot and an half deep, treading it down cloſe: this new Dung will add a freſh Warmth to the Beds, and cauſe the Plants to ſhew Fruit ſoon after.

The Watering of theſe Plants muſt be done with great Caution, and not given to their Stems; the pinching of the Runners muſt alſo be duly attended to; as alſo the pulling off all ſuperfluous Fruit, to encourage thoſe which are deſigned to remain; and, in ſhort, every thing before directed for thoſe under Frames muſt likewiſe be obſerved for theſe; and the farther Care is, to cover them in all hard Rains, and cold Nights, with Mats; which if performed with Care, there will be little Danger of their miſcarrying; and theſe Vines will remain vigorous until the Cold in Autumn deſtroys them.

There have been many Perſons, who of late Years have raiſed their Melons under oiled Paper; and in many Places they have ſucceeded well; but where this is practiſed, there muſt be great Care taken not to keep theſe Coverings too cloſe over them; for where that is done, the Vines will draw very weak, and rarely ſet their Fruit in any Plenty; therefore where theſe Coverings are propoſed to be uſed, I ſhould adviſe the bringing up of the Plants under Hand or Bell-glaſſes, in the manner before directed, until they are grown far enough to be let out from under the Glaſſes; and then, inſtead of the Covering with Mats, to put over the oiled Paper: and if this Covering is prudently managed, it will be the beſt that can be uſed: the beſt Sort of Paper for this Purpoſe is that which is ſtrong, and not of too dark Colour; and it ſhould be done over with Linſeed-oil, which will dry ſoon. There ſhould be a proportionable Number of the Sheets of this Paper paſted together, as will ſpread to the Dimenſions of the Frame to which it is to be faſtened; and if this is fixed to the Frame, before the Oil is rubbed over it, ſo much the better: but this ſhould be done ſo long before they are uſed, as that the Oil may be thoroughly dry, and the Stench gone off, otherwiſe it will deſtroy the Plants.

There are ſome Perſons, who make theſe Frames of broad Hoops, in Imitation of the Covers of Waggons: but as theſe are cumberſome to move, and there are no Conveniencies for admitting Air to the Plants, but by raiſing the whole Frame on one Side, I prefer thoſe made of Pantile-laths, fram'd like a Ridge of an Houſe; and each Slope, having Hinges, may be raiſed at Pleaſure to admit the Air to the Plants.

The farther Management of the Melons, after their Fruit is ſet, is to keep pulling off all the ſuperfluous Fruit, and to pinch off all weak Runners, which may draw away Part of the Nouriſhment from the Fruit; as alſo to turn the Fruit gently twice a Week, that each Side may have equal Benefit of the Sun and Air: for when they are ſuffer'd to lie with the ſame Side conſtantly to the Ground, that Side will become of a pale or whitiſh Colour, as if it were blanched, for want of the Advantages of the Sun and Air. The Plants will require a little Water in very dry Weather; but this ſhould be given them in the Alleys, at a Diſtance from the Stems of the Plants, and not oftener than once a Week; at which times the Ground ſhould be well ſoaked in the Alleys. This will encourage the Growth of Fruit, and cauſe the Fleſh to be thick; but the great Caution which is neceſſary to be obſerved, is, not to over-water the Plants, which is a certain Injury to them: alſo be ſure to give as much free Air as poſſible, at all times, when the Weather will permit; for this is abſolutely neceſſary to render the Fruit good.

When the Fruit is fully grown, they muſt be duly watched to cut them at a proper time; for if they are left a few Hours too long upon the Vines, they will loſe much of their Delicacy; therefore they ſhould be looked over at leaſt twice every Day; and if thoſe Fruit which are intended for the Table, are cut early in the Morning, before the Sun has warmed them, they will be much better flavour'd: but if any ſhould require to be cut afterward, they ſhould be put into cold Spring-water, or Ice, to cool them, before they are brought to the Table; and thoſe cut in the Morning ſhould be kept in the cooleſt Place till they are ſerved up to the Table. The Sign of this Fruit's Maturity is, that of its beginning to crack near the Foot-ſtalk, and its beginning to ſmell, which never fail: for as theſe *Cantaloupe* Melons ſeldom change their Colour until they are too ripe, that ſhould never be waited for.

In ſaving of the Seeds, I need not repeat here, that only ſuch ſhould be regarded, as are taken from the firmeſt Fruit, and thoſe which have the higheſt Flavour; and if theſe are taken out with the Pulp intire, without diſplacing the Seeds, and ſuffered to remain in the Pulp two or three Days before it is waſhed out, the better; and then to preſerve only the heavy Seeds, which ſink in the Water.

MELOCACTUS. *Vide* Cactus.

MELOCARDUUS. *Vide* Cactus.

MELOCHIA. *Vide* Corchorus.

MELON. *Vide* Melo.

MELONGENA, Mad-apple.

The *Characters* are;

The Flower conſiſts of one Leaf, ſhaped like a Wheel, and cut into many Segments: from the Flower-cup ariſes the Ovary, which becomes a fleſhy Fruit, full of kidney-ſhap'd Seeds.

Dr. *Linnæus* has joined this Genus of Plants with the *Lycoperſicon* to his Genus of *Solanum*: but theſe ſhould be ſeparated, if we will allow the

Fruit to be taken for a Character to the Genus.

The *Species* are;

1. Melongena *fructu oblongo violaceo. Tourn.* Mad apple with an oblong violet-colour'd Fruit.

2. Melongena *fructu oblongo albo. Tourn.* Mad-apple with an oblong white Fruit.

3. Melongena *ſpinoſa, fructu rotundo croceo. Tourn.* Prickly Mad-apple, with a round ſaffron-colour'd Fruit.

4. Melongena *fructu rotundo, cum ſpinis violaceis. Tourn.* Mad-apple, with a round Fruit, and violet-colour'd Prickles.

Of late, ſome Perſons who were ignorant of the true Name of this Plant, have given it that of the Egg-plant, from a Reſemblance which ſome of theſe Fruit bear to Eggs; but this is confuſing People.

There are ſeveral other Varieties of this Plant, which differ in the Size, Form, or Colour of the Fruit, or in the Shape of their Leaves; but thoſe here mention'd are all that I have obſerv'd in the *Engliſh* Gardens.

Theſe Plants are greatly cultivated in the Gardens of *Italy, Spain,* and *Barbary*; in which Places the Inhabitants eat the Fruit of them boil'd with fat Fleſh, putting thereto ſome ſcrap'd Cheeſe, which they preſerve in Vinegar, Honey, or ſalt Pickle, all Winter, to provoke a venereal Appetite: but in Summer, when the Fruit is juſt ripe, they uſually gather them, and make them up into Puddens with ſeveral Sorts of Spices, and other Ingredients: which Diſh the *Italians* are very fond of.

The *Italians* call this Fruit *Melanzana*, from the antient *Latin* Name of *Mala inſana*; by which it is by many Authors ſtiled. The *Turks* call it *Badanjan*, and in ſome *Engliſh* Books it is titled *Brown Johns*; probably from a Corruption of the *Turkiſh* Name. By ſome it has been called *Brown Jolly*, and *Baron Jelly*, from the ſame Corruption.

They are propagated by Seeds, which muſt be ſown upon a moderate Hot-bed in *March*; and when the Plants come up, they muſt be tranſplanted into another Hot-bed about four Inches aſunder, obſerving to water and ſhade them until they have taken Root: after which you muſt give them a great Share of Air when the Weather is warm, otherwiſe they will draw up very weak. They muſt alſo be frequently water'd, without which they will make but a very indifferent Progreſs: but when they are grown ſo ſtrong as to fill the Frame (which will be by the middle of *May*), you muſt tranſplant them out into a rich Spot of Ground at two Feet Diſtance; obſerving to preſerve as much Earth to the Roots as poſſible when you take them up, otherwiſe they are ſubject to miſcarry. You muſt obſerve to water them plentifully until they have taken Root; after which they will require but very little Care more than to keep them clear from Weeds, and in very dry Weather to give them ſome Water.

About the middle of *June* the Fruit will appear; at which time, if the Weather be very dry, you muſt often water them; which will cauſe the Fruit to grow very large, and increaſe their Number: toward the latter End of *July* their Fruit will ripen: when you muſt preſerve the Seeds of each Kind ſeparate.

Theſe Plants are only preſerv'd as Curioſities in the *Engliſh* Gardens, the Fruit being never us'd in this Country, except by ſome *Italians* or *Spaniards*, who have been accuſtom'd to eat of them in their own Countries.

MELOPEPO, The Squaſh.

The *Characters* are;

It hath the whole Appearance of a Pompion or Gourd; from which this differs in its Fruit; which is roundiſh, fleſhy, ſtreaked, angular, and, for the moſt part, divided into five Partitions, incloſing flat Seeds adhering to a ſpongy Placenta.

The *Species* are;

1. Melopepo *compreſſus. C. B. P.* The common or flat Squaſh.
2. Melopepo *fructu maximo albo. Tourn.* The large white Squaſh, commonly call'd The white flat Pompion.
3. Melopepo *fructu citriformi. Tourn.* The citron-ſhaped Squaſh.
4. Melopepo *verrucoſus. Tourn.* The warted Squaſh.
5. Melopepo *verrucoſus, fructu & ſemine albis. Tourn.* Warted Squaſh, with white Fruit and Seed.
6. Melopepo *flaveſcens, folio aſpero. Tourn.* Yellowiſh Squaſh, with a rough Leaf.

There are ſeveral other Varieties of this Plant in the *Weſt-Indies*, where they greatly abound, moſt of which are ſeminal Variations, and ſeldom continue long to produce the ſame Kinds from Seeds; at leaſt with us they never continue three Years together the ſame, but vary moſt extraordinarily: for the Seeds ſav'd from ſuch Plants which grew upright, and did not produce Runners (as the more ordinary Sorts) the ſucceeding Year, were as luxuriant as any of the other Kinds; and the Fruit was of a different Shape from thoſe which the Seeds were taken from.

Theſe are all propagated by ſowing their Seeds in *April* upon a moderate Hot-bed; and when the Plants come up, they ſhould have a great Share of Air, otherwiſe they will draw up ſo weak, as to be good for little: you muſt alſo gently refreſh them with Water, as you ſhall find they require it. In *May* they muſt be tranſplanted out where they are deſigned to remain (which in *England* is moſt commonly upon old Dunghils, over which the Vines will ſpread, and produce a great Quantity of Fruit). If you plant them in an open Spot of Ground, you ſhould dig Holes at the Diſtance of 14 Feet ſquare; into each of which you ſhould lay 2 or 3 Wheelbarrows of hot Dung, making an Hollow in the Middle to receive the Plants, which muſt be fill'd with good rich Earth; then cover the Dung all over, Top and Sides, with the Earth that came out of the Hole, placing a Glaſs over the Middle; in which manner it ſhould remain until the Earth in the Holes begins to warm (which is commonly in twenty-four Hours after making); when you muſt take the Plants up out of the Seed-bed, and plant two of them into each Hole; obſerving to water and ſhade them until they have taken Root: after which you muſt let them have a free Air; and when they begin to ſend forth their Shoots, if both Plants have taken, one of them muſt be pulled out; and you muſt take off the Glaſſes, and permit them to run; obſerving only to clear them from Weeds, and in very dry Weather to refreſh them now-and-then with a little Water.

In *July* theſe Plants will produce a great Quantity of Fruit, which ſome People are very fond of: theſe they gather while young, and boil them with Meat inſtead of Turneps: but notwithſtanding what ſome Perſons have advanc'd concerning the Goodneſs of this Fruit, yet, from ſeveral Trials which I have made, I could not bring my Palate to reliſh them; for they have a very great

Flatulency in their Taſte, which is agreeable to very few Perſons: but in the *Weſt-Indies*, where there is a Scarcity of Garden Roots and Plants, theſe, and many other Sorts, are eſteemed Delicacies.

MELONRY, or MELON-GROUND, is an Apartment in the Kitchen-garden for the Propagation of Melons.

The Spot of Ground ſhould be open to the South-eaſt Sun; but ſhelter'd from the Weſt, North-weſt, and North-eaſt Winds, by Walls, Pales, or Hedges: it ſhould alſo be upon a dry Soil; for nothing is more injurious to theſe Plants than much Wet: and in the Spring it often proves very wet Weather; when, if the Soil be very wet, there will be no making the Ridges until it is very late. You ſhould alſo contrive to place it as near to the Dung as poſſible, which will ſave a great deal of Labour in wheeling the Dung; and, if you can have a Pond of Water near it, this, in very dry Weather, will be very uſeful to water the Melons.

As to the Size of the Ground, that muſt be proportion'd to the Quantity of Ridges intended; which you may eaſily calculate by allowing eleven Feet Breadth for every Ridge, and the Holes plac'd at about five Feet aſunder; but it is the beſt Way to allow room enough where you are not ſtreighten'd for it.

This Ground ſhould be inclos'd with a Reed-fence, and kept conſtantly lock'd up during the time that the Melons are growing; for if they are expos'd to every Perſon that walks in the Garden (moſt of whom have a Curioſity to handle the Vines, and look after the Fruit), it will be of ill Conſequence; nothing being more injurious to theſe Plants than frequent tumbling or diſturbing their Leaves.

The common Practice in moſt Gentlemens Gardens is, to incloſe a Spot of Ground either with Walls or Pales, which they conſtantly appropriate to this Purpoſe: but this is by no means a good Method; for it rarely happens that theſe ſucceed well longer than two Years in the ſame Place, unleſs the Soil be removed, and freſh brought in, which is very expenſive; therefore the beſt Way is, to have a ſufficient Parcel of Reeds made into Panels, which may be annually moved from Place to Place; ſo that you need not continue your Ridges longer than one Year in the ſame Place. And if you have a Piece of Ground which is large enough to divide into four ſuch Places, the Fence may be every Year remov'd forward till the Whole has been occupy'd; after which you may return to the Spot where you began, which, by that time, will be as good as freſh Earth: and hereby, without much Trouble, you may remove them every Year; for as one of the Sides will remain unremov'd every time the Fence is carried forward, the Labour will not be ſo great as if it were wholly remov'd to ſome Diſtance; and theſe Reed-fences are much preferable to either Walls or Pales for this Purpoſe.

MELOTHRIA.

The *Characters* are;

The Empalement of the Flower is of one Leaf, bell-ſhap'd, and cut ſlightly at the Brim into five Parts; this reſts upon the Embryo: the Flower is of one Leaf, wheel-ſhaped, having a Tube the Length of the Empalement: in the Centre of the Flower is ſituated the Pointal, ſupporting a cylindrical Style, attended by three conical Stamina, *which are inſerted in the Tube of the Flower, and are extended* *to the ſame Length: the Pointal afterward becomes an oval ſmall Berry, having three Diviſions, in which are lodged ſmall flat Seeds.*

We have but one *Species* of this Plant; *viz.*

Melothria. *Lin. Hort. Cliff.* Small creeping Cucumber, *vulgo.*

This Plant grows wild in the Woods in *Carolina*, *Virginia*, and alſo in many of the Iſlands in *America*: it creeps upon the Ground, with ſlender Vines, having angular Leaves, ſomewhat reſembling thoſe of the Melon; but much ſmaller. Theſe Vines ſtrike out Roots at every Joint, which faſten themſelves into the Ground, and thereby a larger Share of Nouriſhment is drawn to the Plants; by which means their Vines extend to a great Diſtance each Way, and cloſely cover the Ground. The Flowers are very ſmall, in Shape like thoſe of the Melon, and of a pale-ſulphur Colour. The Fruit, in the *Weſt-Indies*, grows to the Size of a Pea, of an oval Figure, and changes black when ripe: theſe are by the Inhabitants ſometimes pickled when they are green.

In *England* the Fruit are much ſmaller, and tis ſo hidden by the Leaves, as to render it difficult to find them. The Plants will not grow in the open Air here, but muſt be ſown upon an Hot-bed; and if they are permitted, will ſoon ſpread over the Surface of a large Bed; and when the Fruit is ripe, if they ſcatter their Seeds, the Plants will come up where the Earth happens to be uſed on an Hot-bed again; and if they are ſupplied with Water, will require no farther Care. This Plant is in ſome Gardens preſerved for the ſake of Variety; but is of no Uſe.

MENISPERMUM, Moonſeed.

The *Characters* are;

It hath a roſaceous Flower, conſiſting of ſeveral ſmall Leaves, which are placed round the Embryo in a circular Order: the Pointal, which is divided into three Parts at the Top, afterward becomes the Fruit or Berry, in which is included one flat Seed, which is, when ripe, hollowed like the Appearance of the Moon.

The *Species* are;

1. Menispermum *Canadenſe ſcandens, hederaceo folio. Acad. Reg. Scien.* 1706. Climbing *Canady* Moonſeed, with an Ivy-leaf.

2. Menispermum *Canadenſe ſcandens, umbilicato folio. Acad. Reg. Scien.* 1706. Climbing *Canady* Moonſeed, with an umbilicated Leaf.

3. Menispermum *folio hederaceo. Hort. Elth.* Ivy-leav'd Moonſeed.

The firſt and ſecond Sorts have been long Inhabitants of the *European* Gardens. Theſe produce flexible woody Shoots from their Roots, which twiſt round whatever Plants ſtand near them, and will grow to the Height of ten or twelve Feet, and produce their Flowers in Autumn; but they rarely perfect their Seed in this Country.

Theſe Plants are Natives of *Virginia*, and moſt of the Northern Parts of *America*, from whence they were many Years ſince brought into *Europe*, and were preſerved in the Green-houſes in Winter, as tender Plants; but of late Years they have been planted in the full Ground, where they endure the Winter's Cold extremely well without any Shelter. They may be eaſily propagated by the Suckers, which are produced in plenty from their Roots: theſe ſhould be taken off with ſome Fibres adhering to them, in the Spring, before the Plants make new Shoots; and may be planted where they are deſigned to remain; obſerving

ing to water them, if the Seaſon ſhould prove dry, until they have taken Root; after which time they will require no farther Care, but to keep them clear from Weeds, and to ſupport them with Stakes, unleſs they are planted near Trees, round which they may faſten themſelves; for if they trail on the Ground, they will not thrive.

The third Sort was brought from *Carolina* by Mr. *Cateſby*. This is a Plant of humbler Growth than either of the former, ſeldom riſing above four or five Feet high in this Country, and the Stems do not become woody: the Leaves are alſo much ſmaller than either of the other Sorts. This Plant will endure the Cold of ordinary Winters very well in the open Air, provided it is planted in a warm Soil, and a ſheltered Situation. It may be propagated by Suckers from the Root, as the two former Sorts, which are alſo produced in as great Plenty.

The two former Sorts were by Dr. *Plukenet* ranged among the Ivies, from ſome Similitude in the outward Appearance of the Plants to the Ivy: ſo, from his Name, they were commonly called in the Gardens, Ivy with a Bind-weed-leaf.

MENTHA, Mint.

The *Characters* are;

It is a verticillate Plant, with a labiated Flower conſiſting of one Leaf, whoſe Upper-lip is arched, and the Under-lip is divided into three Parts; but both of them are ſo cut, that the Flower ſeems to be divided into four Parts, the two Lips ſcarcely appearing: theſe Flowers are collected into thick Whorles in ſome Species; but in others they grow in a Spike; each Flower having four Seeds ſucceeding it, which are incloſ'd in the Flower-cup: to which may be added, It hath a creeping Root; and the whole Plant has a ſtrong aromatic or balſamic Scent.

The *Species* are;

1. MENTHA *anguſtifolia ſpicata. C. B. P.* Common ſpik'd Mint, uſually call'd Spear-mint.

2. MENTHA *ſpicis brevioribus & habitioribus, foliis menthæ fuſcæ, ſapore fervido piperis. Raii Syn.* Pepper-mint.

3. MENTHA *ſylveſtris, folio longiore. C. B. P.* Long-leav'd Horſe-mint, or Mentaſtrum.

4. MENTHA *arvenſis verticillata hirſuta. J. B.* Water-mint with whorled Coronets, commonly call'd Water-calamint.

5. MENTHA *aquatica ſeu Siſymbrium. J. B.* Water-mint.

6. MENTHA *Siſymbrium dicta, hirſuta, glomerulis ac foliis minoribus ac rotundioribus. Raii Syn.* Orange-mint.

7. MENTHA *ſpicata, folio variegato. C. B. P.* Spear-mint with a variegated Leaf.

8. MENTHA *rotundifolia paluſtris, ſeu aquatica major, folio variegato. Tourn.* The great round-leav'd Water-mint, with a variegated Leaf.

9. MENTHA *anguſtifolia ſpicata glabra, folio rugoſiore, odore graviore. Raii Syn.* Spear-mint with a rugged Leaf, and ſtrong Scent.

10. MENTHA *Chalepenſis anguſtifolia, raro florens. Boerh. Ind.* Narrow-leav'd *Aleppo* Mint, which rarely flowers.

There are ſeveral other Sorts of Mint, which are preſerv'd in ſome curious Botanic Gardens, many of which are Natives of *England*; but as they are not cultivated for Uſe, I ſhall omit them in this Place; thoſe above-mention'd being the Sorts which are commonly propagated for Kitchen or Medicinal Uſes.

The firſt Sort is the moſt commonly cultivated in the *Engliſh* Gardens, both for the Uſe of the Kitchen and Medicine; but the ſecond Sort is by ſome greatly eſteem'd for its Heat, to make a ſimple Water: this, at preſent, is not very common in the Gardens; but has been found growing wild in ſeveral Parts of *England*. The third Sort is alſo us'd in Medicine; but is rarely cultivated in Gardens, being found in great Plenty in ſeveral Places near *London*. The fourth and fifth Sorts are very common by the Sides of the Ponds, and on moiſt Soils, in divers Parts of *England*; and are rarely cultivated in Gardens: theſe are both uſed in Medicine; but the Markets are ſupply'd with them from the Fields. The ſeventh and eighth Sorts are preſerv'd in Gardens, for the Beauty of their variegated Leaves; as are the ninth and tenth Sorts, for their Oddneſs; the one having curl'd Leaves, and the other being very white; but ſeldom produce Flowers in *England*.

All the Sorts of Mint are eaſily propagated by parting the Roots in the Spring, or by planting Cuttings during any of the Summer-months; but ſhould have a moiſt Soil; and after planting, if the Seaſon ſhould prove dry, they muſt be often water'd, until they have taken Root; after which, they will require no farther Care but only to keep them clear from Weeds: they ſhould be planted in Beds about four Feet wide, allowing a Path two Feet wide, to go between the Beds to water, weed, and cut the Plants. The Diſtance they ſhould be ſet is about four or five Inches, or more, becauſe they ſpread very much at their Roots; for which Reaſon, the Beds ſhould not ſtand longer than three Years before you plant freſh; for by that time the Roots will be matted ſo cloſely, as to rot and decay each other, if permitted to ſtand longer. There are ſome People who are very fond of Mint-ſallad in Winter and Spring: in order to obtain which, they take up the Roots before *Chriſtmas*, and plant them upon a moderate Hot-bed pretty cloſe, covering them with fine Earth about an Inch thick; and cover the Bed either with Mats, or Frames of Glaſs. In theſe Beds the Mint will come up in a Month's time, and be ſoon fit to cut for that Purpoſe.

When the Herb is cut for medicinal Uſe, it ſhould be done in a very dry Seaſon, juſt when it is in Flower; for if it ſtand longer, it will not be near ſo handſome, nor ſo well-taſted; and if it be cut when it is wet, it will change black, and be little worth: this ſhould be hung up to dry in a ſhady Place, where it may remain until it be uſed.

If the Soil be good in which theſe Plants are to be ſet, they will afford three Crops every Spring: but after *July* they ſeldom prove good; therefore what Shoots are produc'd after that time, ſhould be permitted to remain till *Michaelmas*, when you muſt cut them down cloſe; and after having clear'd the Beds from Weeds, you ſhould ſpread a little fine rich Earth all over them, which will greatly encourage the Roots againſt the ſucceeding Spring.

MENTHA CATARIA. *Vide* Cataria.

MENTZELIA.

The *Characters* are;

It hath a roſe-ſhaped Flower, conſiſting of ſeveral Leaves, which are placed in a circular Order, and reſt on the Flower-cup: which afterward becomes a membranaceous tubulous Fruit, containing many ſmall Seeds.

We know but one *Species* of this Plant at preſent; *viz.*

MENTZELIA *foliis & fructibus*

aſperis. Plum. Nov. Gen. Mentzelia with rough Leaves and Fruit.

The Name was given to this Plant by Father *Plumier*, who diſcovered it in the *French* Settlements in *America*, in Honour to Dr. *Mentzelius*, who was Phyſician to the Elector of *Brandenburgh*; and who publiſh'd an Index of Plants in *Latin*, *Greek*, and *High-Dutch*.

This Plant grows plentifully in the Iſland of *Jamaica*, from whence the Seeds were ſent to *England* by the late Dr. *William Houſtoun*; which have ſucceeded in the Phyſic-garden at *Chelſea*.

It is an annual Plant, which periſhes ſoon after the Seeds are ripe; therefore muſt be ſown on an Hot-bed early in the Spring, that the Plants may be brought forward early in the Seaſon; otherwiſe they will not produce ripe Seed in this Country. When the Plants are come up about an Inch high, they ſhould be each tranſplanted into a ſeparate Halfpeny Pot filled with light rich Earth, and plunged into an Hot-bed of Tanners Bark; being careful to ſhade them from the Sun until they have taken new Root; after which time they muſt be conſtantly watered every other Day in warm Weather, and ſhould have freſh Air every Day admitted to them, in proportion to the Warmth of the Seaſon, and the Heat of the Bed in which they are plunged. In about ſix Weeks or two Months after tranſplanting, if the Plants have made a good Progreſs, they will have filled the Pots with their Roots; when they ſhould be ſhifted into larger Pots, which muſt be filled with light rich Earth, and then plunged into the Bark-bed in the Stove, that they may have room to grow in Height; obſerving, as before, to water them duly; as alſo to admit freſh Air to them every Day in warm Weather: with this Management the Plants will riſe to the Height of three Feet, and will produce ripe Seeds the Latter-end of *Auguſt*, or the Beginning of *September*. Theſe Plants are cloſely beſet all over with ſmall crooked Spines, by which they will faſten themſelves to whatever touches them ſo ſtrongly, that, by a Perſon's going near them, they will ſtick to the Cloaths, and the Branches of the Plant will ſeparate, and adhere to them, in like manner as the Seeds of Clivers or Gooſegraſs.

MENYANTHES, is Trifolium Paluſtre, or Bogbean.

This Plant is common upon boggy Places in divers Parts of *England*; but is never cultivated in Gardens; for which Reaſon I ſhall not trouble the Reader with any farther Account of it, except the taking notice, that this Plant is at preſent in great Eſteem; being thought an excellent Remedy for the Rheumatiſm, Gout, and many other Diſorders. It is frequently called Bogbane, or Marſh-trefoil, in the Markets: and grows plentifully on Bogs in many Parts of *England*, where it is gather'd, and brought to ſupply the Markets.

MERCURIALIS, Mercury.

The *Characters* are;

The Leaves are crenated, and grow by Pairs oppoſite; the Cup of the Flower conſiſts of one Leaf, which expands, and is cut into three Segments; theſe are Male and Female in different Plants: the Flowers of the Male grow in long Spikes, and conſiſt of many Stamina *and* Apices, *which are loaded with* Farina: *the Ovary of the Female Plant becomes a teſticulated Fruit, having a ſingle round Seed in each Cell.*

The *Species* are;

1. Mercurialis *teſticulata, ſive mas Dioſcoridis & Plinii. C. B. P.*

The teſticulated Mercury, vulgarly call'd The Male *French* Mercury.

2. MERCURIALIS *ſpicata, ſive fœmina Dioſcoridis & Plinii. C.B.P.* The ſpiked *French* Mercury.

3. MERCURIALIS *montana teſticulata. C. B. P.* Teſticulated mountain Mercury, commonly called Dog's Mercury.

4. MERCURIALIS *montana ſpicata. C. B. P.* Spiked mountain, or Dog's Mercury.

5. MERCURIALIS *fruticoſa incana mas. Boerh. Ind.* Hoary ſhrubby Male Mercury.

6. MERCURIALIS *fruticoſa incana teſticulata. Tourn.* Shrubby hoary teſticulated Mercury.

The two firſt Sorts are annual Plants, which grow wild in divers Parts of *England*, and are rarely propagated in Gardens: the Seeds thereof, being ſown, produce the two Sorts promiſcuouſly, and are both gather'd indifferently for medicinal Uſe. Theſe Seeds ſhould be ſown as ſoon as they are ripe, by thoſe who would cultivate them: they will grow upon any Soil or Situation.

The third and fourth Sorts grow wild in ſhady Lanes, and under Hedges, in divers Parts of *England*, where they ſpread greatly at the Roots: theſe are never us'd in Medicine, being eſteem'd poiſonous.

The fifth and ſixth Sorts are not Natives of this Country; but are preſerv'd in curious Botanic Gardens for Variety; theſe may be propagated by ſowing the Seeds ſoon after they are ripe, in a Bed of freſh Earth; where, if the Seeds are good, the Plants will come up the ſucceeding Spring, and endure the Cold of our Winters very well: but if the Plants from which the Seeds are taken, have not had ſome of the Male Plants growing amongſt them, the Seeds will not grow, as I have ſeveral times experienc'd.

MESEMBRIANTHEMUM. *Vide* Ficoides.

MESPILUS, The Medlar.

The *Characters* are;

The Leaves are either whole, and ſhap'd like thoſe of the Laurel, as in the manured Sorts; or laciniated, as in the wild Sorts: the Flower conſiſts of five Leaves, which expand in form of a Roſe: the Fruit is umbilicated, and are not eatable till they decay; and have, for the moſt part, five hard Seeds in each.

The *Species* are;

1. MESPILUS *Germanica, folio laurino non ſerrato, ſive Meſpilus ſylveſtris. C. B. P.* The common Medlar, commonly call'd The *Nottingham* Medlar.

2. MESPILUS *folio laurino, major. C.B.P.* The large *Dutch* Medlar.

3. MESPILUS *apii folio, ſylveſtris ſpinoſa, ſive oxyacantha. C. B. P.* The common Hawthorn.

4. MESPILUS *ſpinoſa, ſive oxyacantha, flore pleno. Tourn.* The double-flowering Hawthorn.

5. MESPILUS *apii folio laciniato. C. B. P.* The Azarola, or *Neapolitan* Medlar.

6. MESPILUS *ſpinoſa, pyri folio. H. L.* The Pyracantha, or Evergreen Thorn.

7. MESPILUS *ſeu ſpina acuta, biflora Britannica. Park. Theat.* The *Glaſtenbury* Thorn.

8. MESPILUS *ſpinoſa, ſive oxyacantha Virginiana. H. L.* The Cockſpur, or *Virginian* Hawthorn.

9. MESPILUS *aculeata pyrifolia denticulata ſplendens, fructu inſigni rutilo, Virginienſis. Pluk. Phyt.* The *Virginian* Medlar, with ſhining Leaves, and very red Fruit; commonly called, The *Virginian* Azarol, with red Fruit.

10. MESPILUS *Virginiana, apii folio, vulgari ſimilis major, grandioribus ſpinis. Pluk. Phyt. Virginian*

Hawthorn, with long ſtrong Thorns, commonly called Maple-leav'd Haw.

11. Mespilus *prunifolia Virginiana non ſpinoſa, fructu nigricante. Pluk. Phyt.* *Virginian* Hawthorn, with a Plum-leaf, and black Fruit.

12. Mespilus *pruni foliis, ſpinis longiſſimis fortibus, fructu rubro magno. Clayt. Flor. Virg.* *American* Haw, with Plum-leaves, very ſtrong Thorns, and a large red Fruit, commonly call'd *Carolina* Haw, with very ſtrong Spines.

13. Mespilus *Virginiana, groſſulariæ foliis, ſpinis longiſſimis rectis, fructu rotundo luteo.* *Virginian* Haw, with Gooſberry-leaves, very long erect Thorns, and a round yellow Fruit, commonly call'd Lord *Iſlay's* Haw.

14. Mespilus *inermis, foliis obverſe ovatis ſubtus tomentoſis, pomis ovatis luteis.* Smooth *American* Haw, with oval Leaves, white underneath, and egg-ſhaped yellow Fruit, commonly called yellow Haw, with pear-ſhaped Fruit.

15. Mespilus *apii folio laciniato, fructu ex albo luteſcente minori. Hort. Cath.* The L'Azarole, with a ſmall yellowiſh white Fruit.

16. Mespilus *folio laurino, major, fructu præcoci ſapidiori oblongo, leviori ſeu rariori ſubſtantia. Hort. Cath.* Smooth oblong Medlar, with large Laurel-leaves, called by the *Italian* Gardeners *Neſpoli*.

17. Mespilus *folio ſubrotundo, fructu rubro. Tourn.* The Dwarf Medlar, with red Fruit.

18. Mespilus *folio rotundiore, fructu nigro ſubdulci. Tourn.* Dwarf Medlar, with black Fruit.

The firſt of theſe Medlars was formerly more common in the Gardens and Nurſeries than at preſent; for ſince the *Dutch* Medlar has been introduced, it hath obtained the Preference; the Fruit of this being much larger than the old one, which has occaſioned their being cultivated in greater Plenty.

The ſixteenth Sort has been brought into *England* by ſome of the *Italian* Gardeners, who annually bring over Orange-trees and Jaſmines: and they have ſold theſe Trees by the common Title of *Neſpoli*, which is applicable to all the Species of this Genus. The Fruit of this Tree is rather ſmaller than that of the Common or *Nottingham* Medlar; but it hath a quicker Flavour, and is earlier ripe; ſo a Plant or two of them may be allowed a Place in thoſe Gardens where there is room.

Theſe Sorts may be propagated by budding or grafting them upon the Hawthorn, or the Pear-ſtock, upon either of which they will take very well; and may be afterward tranſplanted into the Fruit-garden, either in Standards, or trained againſt an Eſpalier, in both which Methods they will ſucceed very well; but if the larger Sort be trained on an Eſpalier, the Fruit will be much larger: but you muſt be careful, in pruning, not to ſhorten their bearing Branches; for the Fruit being, for the moſt part, produced at the Extremity thereof, if they are ſhortened, it will be cut away.

Theſe Plants will grow upon almoſt any Soil; but the Fruit will be much larger upon a ſtrong Soil, rather moiſt than dry; tho' upon a middling Soil they are generally beſt flavoured.

Theſe Fruits are permitted to remain upon the Trees till *October*, when they will begin to fall; at which time they muſt be gathered, when dry, and laid by in a dry Place, until they become ſoft, and begin to decay, which is commonly about a

Month after they are gathered, when they will be fit to be eaten; before which they are ſo very harſh, that it is almoſt impoſſible to eat them.

The third Sort is ſo very common in *England*, that it would be to little Purpoſe to ſpend much time in treating of it, ſince the great Uſe to which it is applied in *England*, is to make Fences; the manner of doing which is already deſcribed under the Article of *Fences* and *Hedges*.

Theſe Trees, when grown large, are great Ornaments to Parks; and during the Seaſon of their Flowering, where the Trees are in plenty, the Air is perfumed with the Fragrancy of their Flowers; and as they are much frequented by Nightingales, ſo their melodious Notes render thoſe Places the moſt agreeable, at that time of the Year, for Retirement: but I would only mention in this Place, that there are two or three Varieties of this Plant commonly obſerved in the Hedges near *London*, which differ in the Size of their Leaves and Fruit: but that Sort which produces the ſmalleſt Leaves is the beſt worth cultivating for Hedges, becauſe their Branches always grow cloſe together; ſo that the Hedge will clip much cloſer, and appear more beautiful: for it is a common Obſervation, That the Branches of all Sorts of Trees grow in a proportionable Diſtance to the Size of their Leaves.

The fourth Sort is a Variety of the third, from which it differs in having fair double Flowers. This is propagated by being budded or grafted upon the common Sort, and may be trained up with regular Stems to the Height of twelve or fourteen Feet; and when planted in Wilderneſſes, or other Plantations of Trees, being intermixed with other flowering Trees of the ſame Growth, makes a very fine Appearance during the Seaſon of its Flowering, which is commonly moſt Part of *May*; the Flowers being produced in large Cluſters, as in the common Sort: but are very double: this Tree is pretty common in the Nurſeries near *London*.

The *L'Azarole*, or *Neapolitan* Medlar, has been introduced from *Italy*, where the Fruit is greatly eſteemed. This is alſo propagated by budding or grafting it upon Stocks of the common Hawthorn, and ſhould be tranſplanted into a moiſt Soil, and warm Situation, where it will produce great Quantities of Fruit annually in *England*, which are ſhaped like thoſe of the common Hawthorn, but much larger; and muſt be preſerved till they begin to decay before they are eaten, as the common Medlar.

I have obſerved theſe Trees in many Places planted againſt warm Walls, as ſuppoſing them too tender to produce Fruit in this Climate, without ſuch Aſſiſtance; which is a very great Miſtake: for I have ſeen much more Fruit upon Standard-trees than were upon thoſe againſt Walls, and they ripened well, and were better taſted.

The Pyracantha, or Ever-green Thorn, was formerly in greater Eſteem than at preſent: it is commonly planted againſt Walls or Buildings, where it affords an agreeable Proſpect in Winter (eſpecially if it has plenty of Fruit), the Fruit being, at that Seaſon, of a beautiful red Colour, and are commonly produced in very large Cluſters, which, together with its ever green Leaves, renders it worthy of a Place in every good Garden. But in order to have Fruit upon every Part of the Tree, in which its greateſt Beauty conſiſts, there ſhould always be a Succeſſion of young Branches trained in; for the Fruit is always produced upon the ſecond and third Years Wood; and all thoſe Branches which are older, never produce any: for want of rightly obſerving this Method, moſt of the Trees of this Kind ſeldom have any Fruit but toward their extreme Parts; which is one Reaſon theſe Trees have been much neglected of late Years.

The Branches of this Tree are very flexible, ſo that it cannot be trained up to a Standard; but muſt always have the Aſſiſtance of a Wall, or ſome other Building, to ſupport it. It is very hardy, and will grow in almoſt any Soil or Situation; but it agrees beſt with a dry Soil, in which it will always produce a greater Quantity of Fruit.

This may be propagated by laying down the tender Shoots, which are commonly two Years before they will be rooted enough to tranſplant (but, notwithſtanding this, it is a more expeditious Method than to raiſe them from Seeds, which rarely come up until the ſecond Year, and are but of ſlow Growth the two ſucceeding Years); then they may either be planted where they are to remain, or into a Nurſery for two or three Years, where you may train them, according to the Places where they are deſigned to be planted: but the ſooner they are planted where they are to remain, the better they will ſucceed. It is commonly three Years after they are planted out, before they begin to produce Fruit.

The *Glaſtenbury* Thorn is preſerved in many Gardens as a Curioſity: this often produces ſome Bunches of Flowers in Winter, and afterwards flowers again at the Seaſon with the common Sort; but doth in no other reſpect differ from the common Hawthorn: the fabulous Story of its budding on *Chriſtmas-day* in the Morning, flowering at Noon, and decaying at Night, is now with good Reaſon diſbelieved; for altho' it may ſometimes happen, that there may be ſome Bunches of Flowers open on that Day, yet, for the moſt part, it is later in the Year before they appear; but this in a great meaſure depends on the Mildneſs of the Seaſon. This Sort may be propagated by budding or grafting it upon the common Hawthorn, and ſhould be planted in a warm Situation, which will greatly promote the Flowering in the Winter; for if they are too much expoſed to cold Winds, the Flower-buds will decay without opening, tho' in other reſpects the Plant is equally as hardy as the common Sort, and may be treated in the ſame manner.

The Cockſpur Hawthorn is of larger Growth than any of the former, and is very hardy: this may be propagated by ſowing the Seeds, in the ſame manner as the common Hawthorn; and they commonly abide in the Ground till the ſecond Year, as they do: therefore the moſt expeditious Way to increaſe this Plant is, to bud or graft it upon the common Hawthorn; tho' I muſt confeſs, that the Trees thus propagated will not arrive to the Magnitude as thoſe generally do which are propagated from Seeds: but will produce Fruit much ſooner: but where a Perſon intends to have them in Perfection, they ſhould always be propagated from Seeds. This Sort will grow to the Height of eighteen or twenty Feet, and may be trained up with regular Stems and Heads, and when planted amongſt other Trees of the ſame Growth, they make an agreeable Variety; for in the Spring, when they are in

Bloſſom, they are very pleaſing, the Flowers being very large, and are produced in great Bunches at the Extremity of their Branches; and in Autumn, when the Fruit is ripe, which is very large, and grows in great Cluſters, they have a beautiful Appearance, and are eſteemed very good Feed for Deer.

The ninth, tenth, and eleventh Sorts were brought from *Virginia* ſeveral Years ſince, and are preſerved as Curioſities by ſuch Perſons as are Lovers of Trees. Theſe may be propagated from Seeds, as the other Sorts, or by budding or grafting them upon the common Hawthorn; and may afterwards be tranſplanted into Wilderneſs-quarters, amongſt other Trees of the ſame Growth, where they will afford an agreeable Variety.

The ninth Sort will grow larger than the other two, and, if raiſed from Seeds, will equal the Cockſpur Hawthorn; and the Flowers and Fruit are full as large as thoſe; ſo that it is very proper to be intermixed therewith.

The tenth and eleventh Sorts commonly grow to the Size of our common Hawthorn, with which they may be intermixed, for Variety, in Wilderneſs-plantations.

The tenth Sort is, by ſome of the Gardeners, called the Maple-leav'd Haw, from the Leaves of this Tree having ſome Reſemblance to thoſe of the common or leſſer Maple. This Sort flowers later in the Seaſon, than any of the other; ſeldom being in Beauty earlier than the Beginning of *June*, and ſometimes not until the Middle of that Month: but the Bunches of Flowers being larger than any of the Sorts yet known, renders this the moſt valuable, from the great Appearance which it makes in Flower; and alſo in the Autumn, when the Fruit is ripe, theſe Trees are equally beautiful; their Fruit being of a lively red Colour, and hanging in large Bunches on every Part of the Tree.

The Fruit of the eleventh Sort is black when ripe; but theſe are produced thinly on the Trees, ſeldom more than two or three growing in each Cluſter: the Leaves are ſhaped ſomewhat like thoſe of the Plum; but are longer and narrower: this is preſerved more for the ſake of Variety than its Beauty.

The twelfth and fourteenth Sorts have been of late Years introduced into the *Engliſh* Gardens from *America*, and are propagated in the Nurſeries near *London*. The twelfth Sort has the longeſt and ſtrongeſt Thorns of any of the Sorts: the Leaves are like thoſe of the Plum-tree: the Fruit is as large as thoſe of the Cockſpur-haw; but they are produced but thinly, ſeldom more than two or three growing together: and by the Growth of this Tree (when upon its own Stock) in *England*, it ſeems more inclinable to a Shrub than a Tree.

The fourteenth Sort is a larger-growing Tree, being equal to the Cockſpur-haw: this hath no Spines, and the Leaves are extended in Breadth more than Length: they are of a whitiſh Colour on their Under-ſide: the Fruit is as large as thoſe of the Cockſpur-haw, but of an oval Shape, and a yellowiſh-green Colour: but theſe come ſingly, or by Pairs, rarely three of them growing together; ſo that the Trees make no great Appearance either in Flower or Fruit.

The thirteenth was many Years ſince growing in the Biſhop of *London*'s Garden at *Fulham*; but hath lately been recovered again from *America*, after having been loſt for many Years. The Thorns of this Sort are very long and ſlender: the Fruit is ſmall, and crowned with Leaves.

The fifteenth Sort has been lately introduced among us from *Italy*: this is different from the other Sorts in the Shape and Colour of the Fruit, which is flat, and of a yellowiſh-white Colour. This may be propagated by budding or grafting it upon the common Hawthorn, and is worthy of a Place in all curious Collections of Trees.

The ſeventeenth and eighteenth Sorts are of humbler Growth, ſeldom riſing above five or ſix Feet high, and are proper to intermix with Shrubs of the ſame Growth, where, by their different woolly Leaves, together with their Flowers and Fruit, in their Seaſons, they add greatly to the Variety of ſuch Plantations: they may be eaſily propagated by laying down their tender Branches, which, in one Year, will be rooted ſufficiently to tranſplant; when they may be placed where they are to remain, or planted into a Nurſery, and trained up to regular Heads; by which Method they will be leſs liable to miſcarry, than if they were placed to remain in the Wilderneſs immediately. They may alſo be grafted on the Pear or White-thorn.

The ſeventeenth Sort produces great Quantities of Suckers from the Roots, which may be taken off in the Spring, and tranſplanted into a Nurſery two or three Years, until they have acquired Strength enough to tranſplant for good, where they are to remain; by which Method they may be greatly increaſed: but the Plants thus raiſed will be more ſubject to produce a great Number of Suckers from their Roots, which, if not yearly taken off, will grow up into a Confuſion, and ſtarve the old ones.

They produce their Flowers in *April* and *May*, and their Fruits are commonly ripe in *Auguſt*: but theſe are of no Uſe, except to propagate the Species; which being a tedious Method, and the Layers taking Root ſo freely, renders it not worth practiſing; tho' it may happen, that ſome Varieties may be obtained this way; as is often found in many other Trees and Shrubs.

METHONICA. *Vide* Glorioſa.

MEUM, Spignel.

The *Characters* are;

It is an umbelliferous Plant, with very narrow Leaves: the Seeds are large, oblong, and ſtriated: to which may be added, It hath a perennial Root.

This Plant is propagated in the Phyſic-gardens, for medicinal Uſe; but is very ſeldom found in other Gardens. It may be propagated by Seeds, which ſhould be ſown in Autumn, ſoon after they are ripe; and in the Spring the Plants will appear, when they ſhould be carefully cleared from Weeds; and in very dry Weather muſt be refreſhed with Water. In this Place the Plants may remain until the Autumn following, when they may be tranſplanted into a ſhady Border about a Foot aſunder, where they may remain for Uſe. They may alſo be propagated by parting their Roots in Autumn, which is the moſt expeditious Method.

MEZEREON. *Vide* Thymelæa.

MILIUM, Millet.

The *Characters* are;

It hath a looſe divided Panicle; and each ſingle Flower hath a Calyx, *conſiſting of two Leaves, which are inſtead of Petals, to protect the* Stamina *and* Piſtillum *of the Flower, which afterward becomes an oval ſhining Seed.*

The *Species* are;

1. Milium *ſemine luteo.* C. B. P. Yellow or common Millet.

2. Milium *ſemine albo.* C. B. P. Millet with a white Seed.

3. Milium *ſemine nigro.* C. B. P. Millet with a black Seed.

4. Milium *arundinaceu, ſumbrotundo ſemine, Sorgo nominatum.* C. B. P. Reed-like Millet, with roundiſh Seeds, commonly call'd Sorgo or *Guiney* Corn.

There are ſome other Varieties of theſe Plants, which chiefly differ in the Colour of their Seeds, which will be to little Purpoſe to enumerate in this Place, thoſe here mentioned being the principal Sorts which I have obſerved growing in *England.*

The three firſt Sorts are Varieties of each other, and only differ in the Colour of their Seeds; which Difference will ariſe from the ſame Seeds very often; but the Yellow is always preferred, tho' the White is no-way inferior to it; but the black Sort is eſteem'd little worth.

Theſe Plants were originally brought from the *Eaſtern* Countries, where they are ſtill greatly cultivated; from whence we are furniſhed annually with this Grain, which is by many Perſons greatly eſteemed for Puddens, *&c.* Theſe are ſeldom cultivated in *England,* but by way of Curioſity in ſmall Gardens, or for feeding of Poultry, where the Seeds generally ripen very well.

They muſt be ſown the Beginning of *April* upon a warm dry Soil, but not too thick, becauſe theſe Plants divide into ſeveral Branches, and ſhould have much room; and when they come up, they ſhould be cleared from Weeds; after which they will, in a ſhort time, get the better of them, and prevent their future Growth. In *Auguſt* theſe Seeds will ripen, when it muſt be cut down, and beaten out, as is practiſed for other Grain: but when it begins to ripen, if it is not protected from Birds, they will ſoon devour it.

The *Guiney* Corn riſes commonly to be ten or twelve Feet high, and has jointed Stalks like the Reed; upon the Tops of which the Panicles are produced, which are very large, as are alſo the Grains. This Sort will come up very well, if ſown as the former; but ſeldom perfects its Seeds with us, except the Seaſon be very warm.

MILLEFOLIUM, Yarrow, Milfoil, or Noſebleed.

There are ſeveral Sorts of this Plant, which are cultivated in Botanic Gardens for Variety; but as they are rarely propagated for Uſe, I ſhall paſs them over without nameing them; and only obſerve, that the common Sort, which grows in great Plenty upon dry Banks, in moſt Parts of *England,* is that which is ordered for medicinal Uſe.

MILLERIA.

The *Characters* are;

It hath a compound Flower, conſiſting of ſeveral Florets, and one Half-floret, contained in one common Flower-cup; but theſe Florets are barren, and the Half-floret, which is fruitful, is ſucceeded by one Seed, which is ſurrounded by the Flower-cup.

The *Species* are;

1. Milleria *annua erecta major, foliis conjugatis, floribus ſpicatis luteis. Houſt.* Greater upright annual Milleria, with Leaves growing oppoſite, and yellow Flowers growing in a Spike.

2. Milleria *annua erecta minor, foliis parietariæ, floribus ex foliorum alis. Houſt.* Leſſer upright annual

Milleria, with Pellitory-leaves, and the Flowers growing from the Wings of the Leaves.

3. Milleria *annua erecta ramoſior, foliis maculatis, profundius ſerratis. Martyn. Cent.* 1. Upright branching annual Milleria, with ſpotted Leaves, which are deeply ſawed.

4. Milleria *annua erecta minor, folio parietariæ longiori, floribus ex foliorum alis.* Leſſer upright annual Milleria, with a longer Pellitory-leaf, and the Flowers growing from the Wings of the Leaves.

The two firſt Sorts were diſcovered by the late Dr. *William Houſtoun* at *Campechy* in the Year 1731. who conſtituted this Genus, on finding the Characters differing from all the Genus's which were before eſtabliſh'd.The Seeds of both theſe Sorts he ſent to ſeveral curious Perſons in *England* and *Holland*, where they have ſucceeded very well.

The other two Sorts were diſcovered by Mr. *Robert Millar*, Surgeon, at *Campechy* in the Year 1734. from whence he ſent their Seeds into *England*, where they have alſo ſucceeded very well. The third Sort nearly reſembles the firſt in its Leaves, Flowers, and Growth; but branches a little more than that doth, and the Leaves are ſpotted with Black; the Flowers alſo are a little larger. The fourth Sort, which is ſomewhat like the ſecond, grows taller, and doth not branch from the Bottom as the ſecond doth; the Leaves are alſo much longer; but there appears no Difference in their Flowers.

The Seeds of theſe Plants ſhould be ſown early in the Spring, on a moderate Hot-bed; and when the Plants are come up about two Inches, they ſhould be each tranſplanted into a ſeparate Pot filled with light rich Earth, and then plunged into a moderate Hot-bed of Tanners Bark, being careful to ſhade them from the Sun until they have taken Root, as alſo to water them frequently. After the Plants are rooted, they ſhould have a large Share of free Air admitted to them, by raiſing of the Glaſſes of the Hot-bed every Day when the Weather is fair; and they muſt be conſtantly watered every Day in hot Weather; for they are very thirſty Plants. With this Management, the Plants will, in a Month after tranſplanting, riſe to a conſiderable Height; therefore they ſhould be ſhifted into larger Pots, and placed in the Stove, plunging them into the Bark-bed, where they may have room to grow, eſpecially the firſt and third Sorts, which uſually grow eight or nine Feet high, where they are well managed. But the ſecond and fourth Sorts ſeldom riſe above three Feet high, and do not ſpread their Branches very far; ſo theſe may be allowed leſs room.

In the Middle of *July* theſe Plants will begin to flower, and the Seeds will be ripe ſoon after: therefore they muſt be gathered as ſoon as they change of a dark-brown Colour, otherwiſe they will ſoon fall off, eſpecially thoſe of the two large Kinds, which will drop on the leaſt Touch when they are ripe. Theſe Plants will continue flowering till *Michaelmas*, or later, if the Seaſon proves favourable; but when the Cold of the Autumn comes on, they will ſoon decay.

MIMOSA, The Senſitive Plant.

The *Characters* are;

The Flower conſiſts of one Leaf, which is ſhaped like a Funnel, having many Stamina *in the Centre: theſe Flowers are collected into a round Head: from the Bottom of the Flower riſes the Pointal, which afterward becomes an oblong flat jointed Pod,* *which opens both Ways, and contains in each Partition one roundiſh Seed.*

The *Species* are;

1. MIMOSA *ſeu frutex ſenſibilis. Tourn.* The common Senſitive Plant.
2. MIMOSA *humilis fruteſcens & ſpinoſa, ſiliquis conglobatis. Plum.* Dwarf ſhrubby Humble Plant, having Thorns, and the Pods growing together in Bunches.
3. MIMOSA *ſpinis horridiuſcula, & ſenſitiva magis. H. R. Par.* Greater Senſitive or Humble Plant, with very ſharp Thorns.
4. MIMOSA *latifolia, ſiliculis in orbem glomeratis. Tourn.* Broad-leav'd or common Humble Plant.
5. MIMOSA *ſpuria de Pernambucq, dicta Mimoſa Italica. Zan.* The ſlothful Senſitive Plant, *vulgo*.
6. MIMOSA *herbacea procumbens & ſpinoſa, caule quadrangulo, ſiliquis quadrivalvibus. Houſt.* Trailing herbaceous prickly Senſitive Plant, with ſquare Stalks, and Pods having four Cells.
7. MIMOSA *fruticoſa ſpinoſa, ſiliquis latis hirſutis & articulatis. Houſt.* Prickly ſhrubby Senſitive Plant, with broad hairy jointed Pods.
8. MIMOSA *non ſpinoſa, paluſtris & herbacea, procumbens, flore luteo pleno. Houſt.* Smooth marſh herbaceous trailing Senſitive Plant, with full yellow Flowers.
9. MIMOSA *fruteſcens ſpinoſa & hirſuta, tenuibus acaciæ foliis, ſiliquis articulatis. Houſt.* Shrubby prickly and hairy Senſitive Plant, with narrow Leaves like the Acacia, and jointed Pods.
10. MIMOSA *humilis fruteſcens & ſpinoſa, foliis acaciæ latioribus, ſiliquis conglobatis.* Dwarf ſhrubby and prickly Senſitive Plant, with broad Acacia-leaves, and Pods growing in Cluſters.
11. MIMOSA *herbacea non ſpinoſa minima repens. Sloan. Cat. Jam.* The leaſt creeping herbaceous Senſitive Plant, without Spines, commonly call'd Senſitive Graſs.

There are ſome other Species of this Plant, which grow, in the warm Parts of *America*; but thoſe here mention'd are what I have obſerved in the *Engliſh* Gardens.

The firſt Sort is commonly known by the Name of Senſitive Plant, to diſtinguiſh it from the others, which are generally call'd Humble Plants, becauſe, upon being touch'd, the Pedicles of their Leaves fall downward; whereas the Leaves of the firſt Sort are only contracted upon the Touch.

Theſe Plants are all propagated from Seeds, which muſt be ſown upon an Hot-bed early in the Spring; and when the Plants come up, they muſt be tranſplanted into ſmall Pots fill'd with light rich Earth, and plunged into a freſh Hot-bed, obſerving to water and ſhade them until they have taken Root: after which you muſt often refreſh them with Water, and let them have Air in proportion to the Warmth of the Seaſon, always obſerving to keep the Bed in a good Temper for Heat, as alſo to cover the Glaſſes every Night with Mats, which will greatly facilitate their Growth.

With this Management, in about a Month's time, the Plants will have greatly advanced, and their Roots will fill the Pots: therefore you muſt remove them into larger Pots, filling them up with the like rich Earth; then plunge them into the Hot-bed, obſerving to water them well until they have taken Root; and if you ſee the Plants inclinable to droop, when the Sun ſhines warm upon the Glaſſes, you muſt ſhade them until they have recover'd, and are able to endure the Heat.

You muſt alſo obſerve to give

them a greater Share of Air, as the Seaſon advances in Warmth; but you muſt never expoſe them to the open Air, which will not only retard their Growth, but alſo deſtroy the ſenſitive Quality; ſo that I have ſeen ſome Plants of theſe Kinds, which, after having been expoſed to the open Air a few Days, have intirely loſt their Motion.

The firſt of theſe Sorts, if duly water'd, and preſerv'd in a kindly Warmth, will grow, in the Compaſs of one Seaſon, to the Height of eight or nine Feet, and produce great Quantities of Flowers; but unleſs the Autumn proves very favourable, the Seeds ſeldom ripen; and the Plant, being much tenderer than the other Sorts, is rarely preſerv'd thro' the Winter, tho' placed in the warmeſt Stoves; ſo that we are obliged to procure the Seeds from abroad.

There is ſo great an Affinity between this and the eighth Sort, that they are with Difficulty diſtinguiſh'd: but where Dr. *Houſtoun* obſerv'd the eighth Sort, it was growing in ſtanding Waters; and the Branches were ſpread flat on the Surface of the Water in ſuch manner, as if they floated: but the Seeds of this, when ſown in *Europe*, produced Plants of erect Growth; but their Stalks were not ſo woody, as thoſe of this firſt Species, and branch'd out more; the *Pinnæ* of their Leaves were not ſo long, and a greater Number produced on the ſame Footſtalk; but in every other reſpect they are alike.

This Sort is very common in all the Iſlands of *America*, and I have alſo received the Seeds of it from *Virginia* and *Carolina*; ſo that it is certainly a Native of thoſe Countries; tho' it is only found in ſome very warm Situations, where the Seeds ripen annually; which, falling, produce freſh Plants the following Seaſon.

The ſecond Sort is of much humbler Growth, ſeldom riſing above three Feet high; but branches out very much, and is beſet with Thorns: this will abide two or three Years, if preſerv'd in a good Stove, and generally produces Seeds every Year; ſo that it is now become very common in the *Engliſh* Gardens, being the eaſieſt to preſerve, and the moſt plentiful in ſeeding, of all the Sorts.

The third Sort hath very broad Leaves, and is greatly beſet with ſharp Thorns: this will riſe to the Height of five or ſix Feet; but has generally very ſlender Branches, and is tenderer than the laſt-mention'd: it rarely produc'd Seeds in this Country, but may be preſerv'd thro' the Winter in a good Stove.

The fourth Sort has the quickeſt Motion of all the Kinds at preſent in *England*: this is ſomewhat like the third in Appearance; but grows more erect, and hath fewer Spines, and the Flowers are of a different Colour. The Seeds of this Kind are frequently brought over from *Barbados*, where, by the Plenty of Seeds brought over, it ſeems to be the moſt common in that Country.

The fifth Sort is preſerv'd in Botanic Gardens for Variety; but is a Plant of no great Curioſity: it hath ſomewhat the Appearance of the firſt Sort, and will grow erect to the Height of five or ſix Feet, and produce great Quantities of Seeds; but it having no Motion upon being touch'd, renders it leſs valuable than the others.

The three next-mentioned Sorts were diſcover'd by the late Dr. *William Houſtoun*, at *La Vera Cruz*, from whence he ſent their Seeds into *England*, from which many Plants were raiſed. The ſixth Sort riſes to the Height of three Feet, and hath ſlender ſquare Stalks, which are ſtrongly armed with Spines. This is a perennial Plant, which creeps at the Root; ſo that it may be propagated by the Suckers, which are very plentifully emitted. This hath not, as yet, produc'd many Flowers in *England*; for the Shoots generally die to the Root in Winter, and riſe again the following Spring. The Leaves of this Sort do not only cloſe, on being touch'd, but alſo fall downward; ſo that it is ranked amongſt thoſe Kinds which are commonly call'd Humble Plants.

The ſeventh Sort riſes to the Height of ſix or ſeven Feet, and hath a woody Stem, which is ſtrongly armed with crooked Spines. The Leaves conſiſt of ſeveral Wings, which have very narrow *Pinnæ*: theſe Leaves are alſo beſet on their Under-ſide with ſharp crooked Spines all along the Mid-rib, ſo that it is troubleſome to go amongſt the Plants in the natural Place of their Growth. The Flowers of this Kind are of a bright-purple Colour, which are ſucceeded by flat hairy jointed Pods, in which are included the Seeds. This Sort grows very plentifully in moiſt rich Places about *La Vera Cruz*, in the *Spaniſh Weſt-Indies*; as alſo in the *Braſils*, from whence I have receiv'd the Seeds.

This Plant hath produc'd Flowers in *England*; but hath not perfected Seed, tho' it hath liv'd over the Winter, and has grown to a large Size. The Leaves of this Sort cloſe very ſoon on the Touch; but they fall downward very ſlowly, ſo that it is not ranged amongſt the Humble Plants.

The eighth Sort grows plentifully in ſtanding Waters near *La Vera Cruz*, where the Branches float on the Water, in like manner as do the Pond-weeds in this Country; but eſpecially one of the Sorts of Arſeſmart, which is an amphibious Plant, when it grows in the Water: the Leaves are very broad, and lie ſpread on the Surface of the Water; the Branches extending themſelves very wide, in the ſame manner as the other Pond-weeds: but when it grows on dry Ground, the Stalks grow erect, and the whole Appearance of the Plant is ſo much altered, as that ſome Botaniſts have deſcrib'd it as two different Plants: ſo this Mimoſa has a very different Appearance while the Ground, where it grows, is covered with Water; but where the Water dries up, and leaves the Plants while they are young, they will grow more erect; and thoſe of them which have grown in *England*, have riſen to the Height of four or five Feet; but they ſpread themſelves on every Side, and requir'd ſome Support, when they were full grown. This Sort hath produc'd Flowers in *England*, but hath not perfected Seed; and, being an annual Plant, is at preſent loſt in *Europe*. This is one of thoſe commonly call'd Senſitive Plants; for the Leaves do not fall on being touch'd. The ninth and tenth Sorts were diſcover'd by Mr. *Robert Millar*, Surgeon, at *Carthagena*, from whence he ſent their Seeds into *England*, which have ſucceeded in ſeveral Gardens of the Curious. Theſe are both of them of the humble Kind, their Leaves falling on the ſlighteſt Touch. They will both of them live thro' the Winter, if they are placed in a very warm Stove.

The eleventh Sort is very common in *Jamaica*, where it creeps on the Ground, and emits Roots at every Joint, which ſtrike into the Ground; and, by this means, the Plants will ſpread over a large Surface, and the Stalks trail cloſe to the Ground, never riſing in Height; and by its propagating ſo faſt, by the trailing Branches, it is prevented from flowering, which is the Caſe of many of the trailing Plants: I have had ſeveral of the Plants of this Kind which have extended their Branches over the Sides of the Pots in which they grew, and have rooted deeply into the Tanners Bark on the Surface of the Hot-bed; and if they had been permitted to extend their Branches ſo far as they ſeemed naturally inclined, I believe they would in one Summer have cloſely covered the whole Surface of the Bed; but neither of theſe Plants had the leaſt Appearance of Flower: ſo that in its native Place of Growth, this Sort produces very little Seed, which has occaſioned its being very rare in the Gardens of *Europe*; for it is by much the moſt valuable of all the Kinds: this is very quick in its Motion; for, on drawing a Stick over the Plants, they will immediately contract, and leave the Impreſſion for ſome time, till the Plants recover.

Theſe Plants were moſt of them thought to be Annuals formerly, becauſe upon the firſt Approach of cold Weather they were deſtroy'd; but ſince the modern Invention of Bark-ſtoves, moſt of theſe Sorts have been preſerv'd two or three Years, and produce Seeds very well.

The Stove in which theſe Plants are placed in Winter, ſhould be kept to *Anana*'s Heat (as mark'd on the Botanical Thermometers); and during that Seaſon they ſhould be frequently refreſh'd with Water, which muſt be plac'd in the Stove at leaſt twenty-four Hours before it be us'd, that it may have nearly an equal Warmth to the Air of the Stove; but you muſt not give it to them in large Quantities, which will rot their Roots, and cauſe them to decay: you muſt alſo obſerve to pick off all decayed Leaves which may appear at that Seaſon; which, if not taken off, will harbour Inſects, to the great Prejudice of the Plants.

But where there is not the Conveniency of a good Stove to preſerve theſe Plants thro' the Winter, their Seeds may be annually procur'd, and a few Plants raiſed, which may be kept in an Hot-bed under Glaſſes, where they will continue until the Cold approaches in Autumn; and, being a great Curioſity, are worthy of Care in every good Garden.

It is confidently aſſerted by ſome Perſons, that the Plants of this Genus are very poiſonous; and that the *Indians* have a ſecret Way of prepareing the Poiſon, ſo as that the Perſon to whom it is given, ſhall languiſh under the Effects of it for Months or Years, and prove fatal to them: and the ſame Perſons add, that the only Antidote to expel this Poiſon is the Root of the ſame Plant.

MINT. *Vide* Mentha.

MIRABILIS PERUVIANA. *Vide* Jalapa.

MISLETOE. *Vide* Viſcum.

MITELLA, Baſtard *American* Sanicle.

The *Characters* are;

It hath a perennial Root: the Cup of the Flower conſiſts of one Leaf, and is divided into five Parts: the Flower conſiſts of five Leaves, which expand in form of a Roſe: the Ovary becomes a roundiſh Fruit, which terminates in a Point, gaping at the Top, in form of a Biſhop's Mitre, and full of roundiſh Seeds.

The *Species* are;

1. Mitella *Americana, florum petalis integris. Tourn.* *American* Mitella, whoſe Flower-leaves are intire.

2. Mitella *Americana, florum petalis fimbriatis. T. American* Mitella, with fringed Flower-leaves.

3. Mitella *Americana, flore ſquallide purpureo villoſo. Boerh. Ind. American* Mitella, with hairy Flowers, of a dirty purple Colour.

4. Mitella *Americana maxima tinctoria. Inſt. R. H.* The Arnotto, or Anotto; and by the *French* called *Rocou*.

The three firſt Sorts are preſerved in curious Botanic Gardens for Variety; but there being very little Beauty in their Flowers, they are ſeldom propagated in Gardens for Pleaſure. They are very hardy, and will thrive in almoſt any Soil or Situation, and may be propagated either from Seeds, or by parting their Roots, which may be done either in Spring or Autumn, in the manner as is practiſed for Polyanthus's, *&c.* and being planted in a ſhady Situation, will grow very vigorouſly; ſo that, for the ſake of Variety, a few Roots may be admitted in ſhady Borders, where few better Plants will thrive.

The fourth Sort riſes to the Height of ten or twelve Feet, and hath a woody Stem, which is beſet with many Branches at the Top, which are furniſh'd with broad Leaves, ſhap'd ſomewhat like an Heart: from theſe Branches the Flowers come out in ſmall Cluſters, which conſiſt of ſeveral Leaves, and expand in form of a Roſe: theſe are of a pale Fleſh-colour. The Flowers are ſucceeded by brown Pods, ſhap'd like a Mitre, and are echinated on the Outſide in the ſame manner as the Cheſtnut; in which Pods are contained many irregular Seeds, which are of a red Colour.

The Seeds of this Plant are uſed in dyeing, and the *Indians* make uſe of this Colour to paint their Bodies, eſpecially when they go to War; in order, as ſome ſuppoſe, to prevent their diſcovering the Blood when they are wounded, being almoſt of the ſame Colour; ſo is ſuppoſed to make them courageous. But the chief Uſe of it is to prevent the Muſketa's and Flies from annoying them. This Dye is alſo mix'd with Chocolate to give it a Colour.

It grows in the warmeſt Parts of *America*, from whence the Seeds are pretty frequently ſent into *England*. Theſe Seeds ſhould be ſown early in the Spring of the Year, in ſmall Pots filled with light rich Earth, which ſhould be plunged into a moderate Hot bed of Tanners Bark. When the Plants are come up two Inches high, they ſhould be carefully tranſplanted, each into a ſeparate ſmall Pot filled with light rich Earth, and then plunged again into the Tanners Bark, obſerving to ſhade them from the Sun, until they have taken new Root. With this Management the Plants will grow to be a Foot high by the middle of *July*, and will have filled the Pots with their Roots; therefore they ſhould then be ſhaken out of the Pots, and put into Pots a little larger, and plunged again into the Hot-bed, and managed as before. Theſe Plants may remain in the Hot-bed until toward *Michaelmas*, when the Nights begin to be cold; at which time they muſt be remov'd into the Stove, and plunged into the Bark-bed, where they may enjoy a good Share of Warmth in the Winter-ſeaſon, otherwiſe they cannot be preſerv'd in this Country: they muſt be frequently refreſh'd with Water, during the Winter-ſeaſon; but they ſhould not have too much given to them each time, eſpecially if they ſhould caſt their Leaves, which they frequently do toward the Spring.

MOLDAVICA. *Vide* Dracocephalum.

MOLLE, The *Indian* Molle, or Maſtich-tree.

The *Characters* are;

It hath pinnated Leaves, like thoſe of the Lentiſcus; but are terminated by an odd Lobe: the Flower expands in the Form of a Roſe; and the Fruit reſembles a Grain of Pepper.

We have but one *Species* of this Tree in *England*; which is,

MOLLE. *Cluſ. in Monard.* The Arbor Molle, or *Indian* Maſtich-tree.

This Tree is, by ſome Writers, made a Species of Lentiſcus; and hath by ſome been titled *Lentiſcus Africanus*; and by others *Lentiſcus Peruvianus:* but which of thoſe two Countries it is a Native of, I cannot determine; nor whether there is any real Diſtinction in the Characters of this, and the Lentiſcus, having never ſeen either the Flowers or Fruit of this.

This was formerly more common in the *European* Gardens than at preſent, there being very few of them now to be found; moſt of them having been deſtroyed by ſome late ſevere Winters; and being difficult to propagate, has rendered it ſo ſcarce.

It may be propagated by laying down the tender Branches, which in two or three Years will take Root, when they may be taken off from the old Plants, and planted into Pots fill'd with freſh light Earth, obſerving to water and ſhade them until they have taken Root.

But as it is very difficult to make this Tree grow from Layers, ſo it will be neceſſary to ſlit the Branches when laid, which will facilitate their Rooting; and when you cut them off from the old Plants (which ſhould be done in *April*), if you place the Pots upon a moderate Hot-bed, it will cauſe them to take Root much ſooner, provided you water and ſhade them carefully; but you muſt obſerve to let them have Air in proportion to the Warmth of the Seaſon; and when they have taken freſh Root, you muſt inure them to the open Air by degrees, into which they ſhould be removed toward the Latter-end of *May*, placing them in a Situation where they may be defended from violent Winds, in which they may remain until the *October* following, when they muſt be removed into the Green-houſe, placing them where they may have a great Share of free Air in mild Weather; for they only require to be protected from ſevere Cold.

This Tree will grow to the Height of ſeven or eight Feet, but commonly produces its Shoots very irregular, ſo that it is very difficult to form it to a regular Head; for which Reaſon it is not ſo much eſteem'd (except by the Curious in Botany) as the Lentiſcus; but for Variety it may have a Place in all curious Green-houſes.

MOLLUGO.

The *Characters* are;

The Empalement of the Flower is cut into five Segments: the Flower is of one Leaf: the Pointal is ſituated in the Centre of the Flower, which is attended by three Stamina, *and afterward becomes an oval Veſſel, having three Cells, opening in three Parts, and fill'd with ſmall kidney-ſhaped Seeds.*

The *Species* are;

1. MOLLUGO *foliis quaternis obverſe ovatis. Lin. Hort. Cliff.* This Plant was uſually call'd Rupture-wort, with a Chickweed-leaf.

2. MOLLUGO *foliis quinis lanceolatis*

latis inæqualibus. Flor. Leyd. This is by ſome call'd Five-leav'd upright *African* Chickweed.

3. Mollugo *foliis ſeptenis linearibus. Lin. Hort. Cliff. African* Chickweed, with the Appearance of Ladies Bedſtraw.

Theſe are low annual Plants, having little Beauty; ſo are only preſerved in Botanic Gardens for the ſake of Variety: if their Seeds are permitted to ſcatter, the Plants will come up the following Spring: but the two laſt Sorts ſeldom thrive well in the full Ground, unleſs in warm Seaſons: but when their Seeds ſcatter on an Hot-bed, or in Pots in the Stove, they will thrive faſt enough.

MOLUCCA, *Molucca* Balm.

The *Characters* are;

It is a verticillate Plant, with a labiated Flower, conſiſting of one Leaf, whoſe upper Lip is hollow, like a Spoon, but the under Lip is cut into three Segments: out of the Flower-cup ariſes the Pointal, attended, as it were, by four Embryoes, which afterward turn to ſo many angular Seeds, which are incloſed in the bell-ſhaped Calyx.

The *Species* are;

1. Molucca *lævis. Dod.* Smooth *Molucca* Balm.

2. Molucca *ſpinoſa. Dod.* Prickly *Molucca* Balm.

Theſe Plants are annual, and periſh after they have perfected their Seeds. They are preſerved only in ſuch Gardens where Perſons are curious in the Study of Plants, as they have no great Beauty or Uſe. Theſe may be propagated by ſowing their Seeds in *March*, upon a Bed of freſh light Earth, in an open Situation, where the Plants will come up ſoon after; and when they are about two Inches high, they muſt be tranſplanted out, either into freſh Beds of light Earth, or in the Borders of the Pleaſure-garden, placing them at a good Diſtance; for their Branches will extend pretty far, if the Soil be rich; and when they have taken Root, they will require no farther Care, but only to keep them clear from Weeds, and faſten them to Sticks, to prevent their being broken by Winds when they advance; for they will grow upward of three Feet high.

In *July* theſe Plants will flower, and if the Seaſon proves warm, their Seeds will be perfected in *September*; but if the Seaſon is cold and moiſt, they commonly periſh without producing good Seeds in this Country; for which Reaſon theſe Plants ſhould be raiſed in Autumn, and preſerved thro' the Winter under a common Frame, and in the Spring tranſplanted out, as before, when they will flower early, and produce good Seeds.

MOLY, Wild Garlick.

The *Characters* are;

It agrees in every reſpect with the Garlick, to which Genus many Botaniſts have joined theſe Plants: the Flowers are produced in an Umbel.

The *Species* are;

1. Moly *latifolium liliflorum. C. B. P.* Broad-leav'd Moly of *Theophraſtus*.

2. Moly *latifolium Indicum. C. B. P.* Broad-leav'd *Indian* Moly.

3. Moly *latifolium Hiſpanicum. C. B. P.* Broad-leav'd *Spaniſh* Moly, with purple Flowers.

4. Moly *latifolium, flavo flore. H. Eyſt.* Broad-leav'd yellow Moly.

5. Moly *anguſtifolium umbellatum. C. B. P.* Narrow-leav'd Moly, commonly call'd *Homer*'s or *Dioſcorides*'s Moly.

6. Moly *anguſtifolium, foliis reflexis. C. B. P.* Narrow-leav'd Moly, with reflex'd Leaves, commonly call'd the Serpent Moly.

7. Moly *moſchatum, capillaceo folio. C. B. P.* The ſweet Moly of *Montpelier, vulgo.*

There are ſome other Varieties of this Plant, which are preſerv'd in curious Botanic Gardens abroad; but thoſe here mentioned are what I have obſerv'd in the *Engliſh* Gardens.

They are all very hardy Plants, and may be eaſily multiplied by their Off-ſets, which they ſend forth in great Plenty: the beſt Seaſon to tranſplant them is in *Auguſt* or *September*, juſt after their Leaves decay; for if they are permitted to remain long after, and the Seaſon ſhould prove moiſt, they will ſend forth freſh Fibres, when it will be too late to remove them, unleſs they are taken up with Balls of Earth.

They will grow in almoſt any Soil or Situation; but will thrive beſt in a light ſandy Soil, and an open Expoſure.

They commonly produce their Flowers in *May* and *June*, except the ſweet-ſcented *Montpelier* Kind, which ſeldom flowers till *Auguſt*; and are pretty Varieties in the large Borders of the Pleaſure garden, where, being intermix'd with other bulbous-rooted Flowers, they afford an agreeable Variety; but they ſhould not be permitted to remain longer than two Years before they are tranſplanted, becauſe they produce a great Number of Off-ſets (eſpecially *Homer*'s Moly), which, if not taken from the old Roots, will ſtarve them, and cauſe their Flowers to be very weak.

MOMORDICA, Male Balſam-apple.

The *Characters* are:

The Flower conſiſts of one Leaf, is of the expanded bell-ſhaped Kind, but ſo deeply cut, as to appear compos'd of five diſtinct Leaves: theſe Flowers are ſome Male (or barren), others Female, growing upon the Top of the Embryo, which is afterward changed into a Fruit, which is fleſhy, and ſometimes more or leſs tapering, and hollow; and when ripe, uſually burſts, and caſts forth the Seeds with an Elaſticity; which Seeds are wrapped up in a membranous Covering, and are, for the moſt part, indented on their Edges.

The *Species* are;

1. MOMORDICA *vulgaris. Tourn.* The common Male Balſam-apple.

2. MOMORDICA *Zeylanica, pampinea fronde, fructu breviori. Tourn.* Male Balſam apple of *Ceylon*, with Vine-leaves, and a longer Fruit.

3. MOMORDICA *Zeylanica, pampinea fronde, fructu longiori. Tourn.* Male Balſam-apple of *Ceylon*, with Vine leaves, and a longer Fruit.

4 MOMORDICA *Americana, fructu reticulato ſicco. Com. Rar.* Male Balſam-apple of *America*, with a dry netted Fruit.

Theſe Plants are all annual: their Seeds muſt be ſown on an Hot-bed the Beginning of *March*; and, when the Plants come up, they ſhould be tranſplanted out into a freſh Hot-bed, after the manner of Cucumbers or Melons, putting two Plants of the ſame Kind under each Light, and the Plants watered and ſhaded until they have taken Root; after which they muſt be treated as Cucumbers, permitting their Branches to extend upon the Ground in the ſame manner, and obſerve to keep them clear from Weeds.

With this Management (provided you do not let them have too much Wet, or expoſe them too much to the open Air) they will produce their Fruit in *July*, and their Seeds will ripen in *Auguſt*, when you muſt obſerve to gather it as ſoon as you ſee the Fruit open, otherwiſe it will be caſt abroad, and with Difficulty gathered up again.

Theſe Plants are preſerved in curious Gardens for the Oddneſs of their Fruit; but as they take up a great deal of room in the Hot-beds, requiring frequent Attendance, and being of little Beauty or Uſe, ſo they are not much cultivated in *England*, except in Botanic Gardens for Variety.

There are ſome Perſons who put theſe Plants in Pots, and faſten them up to Stakes, to ſupport the Vines from trailing on the Ground, and place the Pots in Stoves; where, when they are ſkilfully managed, they will produce their Fruit tolerably well: and in this way they make a better Appearance, than when the Vines ſpread on the Ground, like Cucumbers and Melons. The third and fourth Sorts ſeldom perfect their Seeds, unleſs they are ſown early in the Spring, and brought forward by being removed into two Hot-beds: but it is the beſt way to put theſe Plants into Pots very young; for they do not tranſplant well when they have grown any Length: therefore they ſhould be each planted in a ſmall Pot, as ſoon as they put out the third, or rough Leaf; and when the Roots have filled theſe Pots, the Plants may be ſhaken out, preſerving all the Earth about their Roots, and put into larger Pots; but ſtill continued in the Hot-bed, until the Plants are too high to remain under the Glaſſes; when they may be remov'd into the Stove, and kept duly watered; as alſo a large Share of free Air admitted to them in warm Weather, without which the Plants will grow ſickly, and produce no Fruit.

MONARDA.

The *Characters* are;

The Empalement of the Flower is tubulous and ſtreaked, conſiſting of one Leaf, and divided at the Brim into five equal Parts: the Flower is of one Leaf, of the lip ſhaped Kind; the upper Lip being erect, narrow, and intire: the Under-lip (or Beard) is broad, and cut into three Segments; the Middle being long and narrow; but the other two broad and blunt: in the Centre of the Flower is ſituated the ſquare Pointal, attended by two Stamina, *and four Embryoes, which afterward are ſo many round Seeds incloſed in the Empalement.*

The *Species* are;

1. MONARDA *floribus capitatis, caule obtuſo. Lin. Vir.* Monarda with an obtuſe Stalk, and Flowers collected in an Head, commonly call'd *Ozweega* Tea.

2. MONARDA *floribus verticillatis. Lin. Hort. Cliff.* Monarda with Flowers growing in Whorles.

3. MONARDA *foliis ovato-lanceolatis, verticillis lateralibus dichotomis corymboſis, foliolis inæqualibus exceptis. Flor. Virg.* Monarda with hoary ſweet-ſcented Leaves.

4. MONARDA *ſpica interrupta, involucris longitudine verticillorum lanceolatis. Flor. Virg. American* Field Baſil, with a purple-ſpotted Flower.

The firſt Sort is, by Dr. *Tournefort*, called a *Leonurus*. This was figured and deſcribed by *Cornutus*, in his Book of *Canada* Plants, by the Title of *Origanum Canadenſe fiſtuloſum*. This Plant is very common in moſt of the Northern Parts of *America*, where the Inhabitants drink an Infuſion of this Herb as Tea, and call it *Ozweega* Tea: there are ſome Perſons in *England* who are fond of this Herb for the ſame Purpoſe, uſing it inſtead of Baum

The firſt and ſecond Sorts are beautiful Garden-plants: the firſt produces large Heads of fine ſcarlet

Flowers, which continue long in Beauty; eſpecially if they are placed in a moiſt ſhady Situation, where they laſt near two Months in Flower, in *July* and *Auguſt*. This is an abiding Plant, which propagates eaſily by its trailing Branches, which, lying upon the Ground, ſtrike out Roots; ſo may be taken off, and tranſplanted: it may be alſo propagated by Slips, in the ſame manner as Mint, or by parting of the Roots. The beſt time to tranſplant them is in the Autumn, that they may be well rooted before the Froſt comes on; and then there will be no Danger of their ſuffering by Cold, nor from the dry Weather in the Spring; ſo will flower ſtrong. This Sort will abide the ſevereſt Cold, in the open Air.

The ſecond Sort produces Flowers of a yellowiſh Colour, ſpotted with black; which, together with the purple Leaves, which embrace the Stalks juſt under the Whorles of Flowers, make a fine Appearance. This and the third Sorts ſeldom continue longer than two Years; and as they ſeldom produce good Seeds in *England*, ſo they are not ſo common as the firſt Sort in the *Engliſh* Gardens. The fourth Sort will continue many Years, and may be propagated in the ſame manner as the firſt; but as there is little Beauty in it, few Perſons preſerve it in their Gardens.

When the Seeds of theſe Plants are obtained from *America*, they ſhould be ſown upon a Bed of light Earth in Spring; and, if it is kept moiſt, many of the Plants will come up the firſt Seaſon; but they often lie in the Ground till the Year after; ſo the Ground ſhould not be diſturbed.

MONBIN, The Hog Plum-tree.

The *Characters* are:

It hath a roſe-ſhaped Flower, conſiſting of ſeveral Leaves, which are ranged in a circular Order; from whoſe Cup ariſes the Pointal, which afterward becomes an oval fleſhy ſoft Fruit incloſing an hard Stone, in which are contained four Kernels or Seeds.

We have but one Sort of this Tree; *viz.*

Monbin *arbor, foliis fraxini, fructu luteo racemoſo. Plum. Nov. Gen.* The Hog Plum-tree, *vulgo.*

This Tree is a Native of the warmeſt Parts of *America*, where it grows in the *Savanna's*, and low marſhy Places, in great Plenty. It riſes to be forty or fifty Feet high, and divides into a great many crooked Branches, which are beſet with winged Leaves ſomewhat like thoſe of the Aſh-tree. The Flowers, which appear in the Spring, are produced in large pyramidal Bunches at the Extremity of the Branches, which are of a white Colour, and are very ſweet: theſe are ſucceeded by ſeveral yellow oval-ſhaped Plums, growing in Cluſters. The Wood of this Tree, being ſoft, is uſed inſtead of Cork, to ſtop Bottles, in *America*.

This, being a very tender Tree, muſt be conſtantly kept in the Stove, otherwiſe it cannot be preſerved in this Country. It may be propagated by Cuttings (which is the moſt common Method practiſed in *America*): but if theſe are to be brought into *England*, they ſhould be planted pretty cloſe together in Tubs of Earth, and placed in a ſhady Situation, until they have taken good Root, before they are put on board the Ship; and in their Paſſage they muſt be kept from ſalt Water: When they arrive in pretty good Health, they ſhould be carefully taken out of the Tubs, and each planted into a ſeparate Pot filled with light rich Earth,

Earth, and plunged into a moderate Hot-bed of Tanners Bark, obſerving frequently to refreſh them with Water: If they come over in an hot Seaſon, it will be proper to ſhade them from the Sun until they are rooted; and at that Seaſon they will require but a very moderate Warmth in the Hot-bed; for too great Warmth would then be very injurious to them. But when they arrive late in the Year, the Bed ſhould have a larger Share of Heat, in order to forward their Rooting, before the Winter's Cold comes on.

Theſe Plants may alſo be propagated by ſowing of their Stones, which ſhould be brought over as freſh as poſſible. Theſe ſhould be ſown in the Spring of the Year, in ſmall Pots filled with light rich Earth, and then plunged into an Hot-bed of Tanners Bark; where, if the Bed is in a good Temperature for Heat, and the Pots of Earth are duly moiſtened, the Plants will come up in about a Month, or ſix Weeks, after ſowing, when they ſhould have freſh Air admitted to them every Day, in proportion to the Warmth of the Seaſon; and they muſt be frequently refreſhed with Water. When the Plants are fit to tranſplant, each Plant ſhould be planted in a ſeparate ſmall Pot filled with light rich Earth, and then plunged into the Hot-bed again, where they muſt have a pretty large Share of freſh Air in warm Weather.

When the Plants have grown ſo large as to have filled the Pots with their Roots, they ſhould be ſhifted into others of a larger Size, being careful not to ſhake the Earth from their Roots. They muſt then be plunged into the Hot-bed again, provided the Plants are not too tall to ſtand under the Glaſſes, without Injury to their Leaves; in which Caſe they muſt be plunged into the Bark-bed in the Stove, where they may have room to advance in Height: but if they have room in the Hot-bed, they may remain there till about *Michaelmas*, when the Nights begin to be cold; at which time they muſt be removed into the Stove, and plunged into the Bark-bed in the warmeſt Part of the Stove. During the Winter-ſeaſon they muſt be often refreſhed with Water; but it muſt not be given them in large Quantities when the Seaſon is cold, eſpecially if they ſhould caſt their Leaves, which they frequently do toward the Spring; then they muſt have but little Water, until they put out new Leaves; becauſe too much Moiſture is injurious to them when they are in almoſt an unactive State.

This Plant has produced Fruit in *England*, which has ripened well: but as there is little Fleſh upon them, they are ſcarce worth cultivating in *England*, for the ſake of their Fruit: but thoſe Perſons who are curious in Exotic Plants, ſhould not be without a Plant or two of this Sort, becauſe it makes an agreeable Appearance when it is in Flower, as alſo in Fruit.

As the Plants obtain Strength, they may be treated a little more hardily than while young; and they will be longer lived; for when they are forced too much by Heat, they ſeldom continue above three or four Years: they always caſt their Leaves in Winter; and thoſe Fruits which have been produced in *England*, ripened upon the Plants after the Leaves had fallen: the Fruit, when ripe, had the Appearance of a Sweetmeat candied over.

MONTIA.

The *Characters* are;

It hath a funnel-ſhaped Flower, conſiſting of one Leaf, whoſe under Part

Part is tubulous; but the upper-Part is expanded, and cut into five Segments: the Fruit which ſucceeds the Flower, is a bicapſular flat Seed-veſſel, which is ſurrounded on the Borders with a Plume, which expands like Rays.

We have but one Plant of this Genus; *viz.*

Montia *arboreſcens, abutili folio ſerrato, fructu racemoſo. Houſt.* Tree-like Montia, with a ſawed Abutilon-leaf, and the Fruit growing in Bunches.

This Plant was diſcovered by the late Dr. *William Houſtoun*, near *Old La Vera Cruz* in *New Spain*, who gave this Name to it in Honour to Dr. *Monti*, Profeſſor of Botany at *Bononia*.

It grows about ſixteen or eighteen Feet high, and hath a woody Stem, which divides into ſeveral Branches: theſe are beſet with Leaves, ſomewhat like thoſe of the yellow Mallow, which are five Inches long, and four broad, ending in a Point: theſe are ſawed round the Edges, and have a Down on their Under-ſides. The Flowers are of a greeniſh-yellow Colour, and are produced in Bunches. The Seaſon of its Flowering is in *January*, in the native Place of its Growth; and in *Europe* it generally flowers a little earlier, commonly by the End of *November*; and the Seeds are ripe in *March*.

This Plant is propagated by Seed, which ſhould be ſown early in the Spring on an Hot-bed; and when the Plants are come up about two Inches high, they ſhould each be tranſplanted into a ſeparate ſmall Pot filled with freſh light Earth, and plunged into a moderate Hot-bed, being careful to ſhade them from the Sun until they have taken Root; after which time they muſt have a large Share of freſh Air admitted to them in warm Weather; and they muſt be duly watered. In this Hot-bed the Plants may remain till Autumn, when they muſt be removed into the Stove; and the firſt Year, while the Plants are young, it will be proper to plunge them into the Bark-bed: but the following Winters they will do very well in the dry Stove, which ſhould be kept up to a temperate Heat. And in the Middle of the Summer they will bear to be expoſed for near three Months, provided they are placed in a warm Situation. In hot Weather theſe Plants muſt be frequently watered; and as they advance in their Growth, ſhould be ſhifted into larger Pots filled with freſh light Earth. With this Management the Plants will thrive very well, and in two or three Years will produce Flowers and Seeds. It may alſo be propagated by Cuttings, which ſhould be planted in *July*, in Pots of rich Earth, and plunged into a very moderate Hot-bed of Tanners Bark, and in the Day-time ſcreened from the Sun: theſe Cuttings will be rooted by the Beginning of *September*, when they ſhould be each tranſplanted into a ſmall Pot, and plunged again into the Hot-bed till they have taken Root; and afterward they may be treated as the old Plants.

MORINA.

The *Characters* are;

It hath a tubulous anomalous perſonated Flower, conſiſting of one Leaf, which is divided into two Lips: the Upper-lip is again divided into two Parts; but the Under-lip is divided into three: from the Flower-cup, which is, for the moſt part, bifid, ariſes the Pointal, fixed like a Nail in the Hinder-part of the Flower: but is barren; for the Flower-cup reſts on *the Embryo*; *and is ſurrounded by another Cup as a Sheath, in which are many roundiſh and angular Seeds.*

We have but one *Sort* of this Plant; *viz.*

Morina *Orientalis, carlinæ folio. Tourn. Cor.* Eaſtern Morina, with a Leaf of the Carline Thiſtle.

This Plant was diſcovered by Dr. *Tournefort*, in his Travels in the *Levant*, who gave it this Name in Honour to Dr. *Morin*, a Phyſician at *Paris*.

This Plant is propagated by Seed, which ſhould be ſown ſoon after it is ripe in the Autumn, otherwiſe the Plants will not come up the following Summer; for I have ſeveral times obſerved, where the Seeds have been ſown in the Spring, they have remained in the Ground fourteen or fifteen Months before the Plants have appeared. Theſe Seeds ſhould be ſown in the Places where the Plants are to remain, becauſe they ſend forth Tap-roots, which run very deep into the Ground; and when theſe are broken or injured in tranſplanting, the Plants ſeldom thrive after. They may be ſown in open Beds or Borders of freſh light Earth, being careful to mark the Places, that the Ground may not be diſturbed; for it frequently happens, that the Seeds do not come up the firſt Year, when they are ſown in Autumn; but when they are ſown in the Spring, they never come up the ſame Year. The Ground where the Seeds are ſown muſt be kept clear from Weeds; which is all that is neceſſary to be done until the Plants come up; when, if the Seaſon ſhould prove dry, it will be proper to refreſh them two or three times a Week with Water: and where they come up too cloſe together, they ſhould be thinned ſo as to leave them near eighteen Inches apart: after which time they will require no other Culture but to keep them conſtantly clear from Weeds; and in the Spring, juſt before the Plants put out new Leaves, to ſtir the Ground gently between them; and lay a little freſh Earth over the Surface of the Bed, to encourage the Plants.

In Autumn theſe Plants decay to the Ground, and ſend forth new Leaves the following Spring: but it will be three Years from the time of the Plants firſt coming up, to their Flowering; tho' after that time they will flower every Seaſon; and the Roots will continue many Years, provided they are not diſturbed. Theſe Plants, when in Flower, make an agreeable Diverſity, when mixed with other hardy flowering perennial Plants; and as they do not require much Care to cultivate them, they deſerve room in every good Flower garden.

MORUS, The Mulberry-tree.

The *Characters* are;

It hath large rough roundiſh Leaves: the Male Flowers (or Katkins, which have a Calyx *conſiſting of four Leaves) are ſometimes produced upon ſeparate Trees, at other times at remote Diſtances from the Fruit on the ſame Tree: the Fruit is compoſed of ſeveral Protuberances, to each of which adhere four ſmall Leaves: the Seeds are roundiſh, growing ſingly in each Protuberance.*

The *Species* are;

1. Morus *fructu nigro. C. B. P.* The common black Mulberry.

2. Morus *fructu albo. C. B. P.* The white Mulberry.

3. Morus *fructu nigro minori, foliis eleganter laciniatis. Tourn.* The leſſer black Mulberry, with Leaves neatly jagged.

4. Morus *fructu albo minori, ex albo purpuraſcente. Tourn.* The ſmall purpliſh-white Mulberry.

5. Morus *Virginiana, foliis latiſſimis ſcabris, fructu rubro longiori. Cat. Plant. Hort.* The broad-leav'd *Virginian* Mulberry, with long red Fruit.

6. Morus *Virginienſis arbor, loti arboris inſtar ramoſa, foliis ampliſſimis. Pluk. Phyt.* The large-leav'd *Virginian* Mulberry, with blackiſh Shoots, ſomewhat like thoſe of the Lote or Nettle-tree.

The firſt of theſe Sorts is very common in moſt Gardens, being planted for the Delicacy of its Fruit: it may be propagated by ſowing the Seeds, or by laying down the tender Branches, which in two Years will take Root, and may then be tranſplanted into the Places where they are to remain. Thoſe Plants which are propagated from Seeds are commonly the moſt vigorous, and generally make the ſtraiteſt Stems: but then there is a very great Hazard of their being fruitful; for it often happens, that ſuch Plants are, for the moſt part, of the Male Kind, which produce Katkins, but ſeldom have much Fruit; for which Reaſon, thoſe who are deſirous to have fruitful Trees, ſhould always propagate them by Layers from ſuch Trees as produce plenty of good Fruit, or chooſe ſuch as they have ſeen bear in the Nurſery: but as the Trees thus raiſed are ſubject to have crooked unſightly Stems, there ſhould be Care taken in the Choice of ſtrait Shoots to make Layers; and when they are tranſplanted out, they ſhould have ſtrait Stakes fixed down by each, to which they ſhould be faſtened as the Shoot is extended, until it comes to the Height you deſign the Stem; then you may ſuffer the Branches to extend as they are inclinable; for this Tree ſhould not be often prun'd; but only ſuch Branches ſhould be cut off which ſhoot croſs, and bruiſe themſelves by rubbing againſt each other; and ſuch as decay ſhould alſo be cut off,

This Tree delights in a light Soil, not too wet, nor over-dry; and ſhould have an open Expoſure; for if it be planted too near to other Trees or Buildings, ſo as to be ſhaded thereby, the Fruit ſeldom ripens well; tho', if they are planted in a Situation where they may be defended from the violent Weſt and South-weſt Winds, which very often blow down and deſtroy great Quantities of the Fruit, it will be of great Advantage; but they ſhould always be open to the Eaſt and South-eaſt Sun, which is of great Service in drying up the Moiſture which lodges upon the Surface of their Leaves in the Night; and not only retards the Fruit, but renders it ill-taſted and watry. And as this Fruit continues late in Autumn, where the Trees are not well expoſed to the Sun, the Fruit will turn mouldy upon the Trees, eſpecially in damp Weather, or in cool Nights.

This Tree delights to grow in rich light Earth, ſuch as are the Kitchen-gardens near *London*, where the Soil is alſo deep; in which Places there are ſome very large Trees, which have been many Years ſtanding; and theſe old Trees produce a much greater Quantity of Fruit than any of the young Trees, allowing for their Proportion; and the Fruit are alſo larger, and better flavour'd: theſe old Trees produce few Male Flowers; for I have conſtantly obſerved, that as the Trees advance in Age, their Number of Male Flowers decreaſes in proportion. I have alſo obſerved ſome Trees, which, while young, produced chiefly Male Flowers, after twenty Years ſtanding, have produced plenty of Fruit, and few Male Flowers.

Where theſe Trees are planted in a very ſtrong or ſhallow Soil, they ſeldom make any Progreſs, eſpecially where the Bottom is either Clay or Chalk; in both which Soils they grow moſſy, and never make much Progreſs.

The Soil under theſe Trees ſhould alſo be every Year well dug and manured; tho' there will ſcarce any Sort of Plants grow under them: but it is of great Advantage to the Fruit, notwithſtanding what may have been ſaid to the contrary.

The white Mulberry is commonly cultivated for its Leaves to feed Silk-worms, in *France* and *Italy*, &c. tho' the *Perſians* always make uſe of the common black Mulberry for that Purpoſe: and I have been aſſured by a Gentleman of Honour, who hath made Trial of both Sorts of Leaves, that the Worms fed with thoſe of the black Sort produce much better Silk than thoſe fed with the White: but he obſerves, that the Leaves of the black Sort ſhould never be given to the Worms, after they have eaten for ſome time of the white, leſt the Worms ſhould burſt; which is often the Caſe, when they are thus treated.

The Trees which are deſigned to feed Silk-worms, ſhould never be ſuffered to grow tall, but rather kept in a ſort of Hedge; and inſtead of pulling off the Leaves ſingly, they ſhould be ſheared off together with their young Branches; which is much ſooner done, and not ſo injurious to the Tree.

This white Sort may be propagated either from Seeds or Layers, as the black Mulberry, and is equally hardy: but the moſt expeditious Method of raiſing theſe Trees in Quantity, is from the Seeds; which may be procured in plenty from the South of *France*, or *Italy*: the beſt way to ſow theſe Seeds in *England* is, to make a moderate Hot-bed, which ſhould be arched over with Hoops, and covered with Mats: upon this Bed the Seeds ſhould be ſown in the middle of *March*, and covered over with light Earth about a Quarter of an Inch deep: in very dry Weather the Bed muſt be frequently watered; and in the Heat of the Day ſhaded with Mats; and alſo covered in the Nights when they are cold: with this Management the Plants will come up in five or ſix Weeks; and as they are tender when they firſt appear, they muſt be guarded againſt froſty Mornings, which often happen in *May*, and deſtroy ſuch tender Plants: if theſe Plants are watered in dry Weather, and kept clear from Weeds, they will make good Progreſs the firſt Year: but there muſt be Care taken of them the firſt Winter, eſpecially to cover them in Autumn, when the firſt Froſts come, which will kill the tender Plants to the Ground, if they are not protected: the following *March* theſe Plants ſhould be tranſplanted into the Nurſery to get Strength, where they may remain two or three Years; and then ſhould be removed where they are to continue.

There are two or three Varieties of this Tree, which differ in the Shape of their Leaves, Size and Colour of their Fruit: but as they are of no other Uſe than for their Leaves, the ſtrongeſt-ſhooting and the largeſt-leaf'd Sort ſhould be preferr'd.

The large-leav'd *Virginian* Sort, with long red Fruit, is at preſent very ſcarce in *England*, tho' it ſeems to be the common Sort, which grows ſpontaneouſly in the Woods of *America*: this may be propagated from

Seeds, or by laying down the Branches, as the common Sort: it is very hardy, and will endure the Cold of our Winters in the open Air very well. The Leaves of this Kind are very large, and ſeem to be as proper for feeding of Silk-worms as thoſe of the common Sort; ſo that if ever the Project of eſtabliſhing a Silk Manufactory in the *Weſt-Indies* ſhould be ſet on foot, there would be no occaſion of their ſending over for Mulberry-trees, as hath been by ſome propoſed, ſince they will find a ſufficient Quantity in all the Woods of that Country.

The large-leaf'd *Virginian* Mulberry, with black Shoots, is ſtill more uncommon than any of the former: there is a large Plant of this Kind growing in the Gardens of the Biſhop of *London* at *Fulham*, which has been ſeveral Years an Inhabitant of that Garden; but has never produced any Fruit, that I could learn; but hath ſome Years a great Number of Katkins, much like thoſe of the Hazel nut, which occaſioned Mr. *Ray* to give it the Name of *Corylus*; but it may be one of the Male Trees, which never produce Fruit, as it ſometimes happens in the common Sorts of Mulberries, the Leaves being very like thoſe of the black Mulberry, but ſomewhat larger and rougher.

This Tree has not been propagated yet in this Country; for tho' it has been budded and grafted upon both the black Mulberries, yet I can't hear, that it hath ſucceeded upon either; and the Tree, being pretty tall, can't be laid down, which is the moſt likely Method to propagate it: this is very hardy, and will endure the Cold of our Climate in the open Air very well, and is coveted as a Curioſity by ſuch as delight in the Variety of Trees and Shrubs.

MOSCHATELLINA, Tuberous Moſchatel.

The *Characters* are;

It hath a Flower conſiſting of one Leaf, which is divided at the Brim into many Parts, from whoſe Cup ariſes the Pointal, fixed like a Nail in the middle of the Flower, which afterward becomes a ſoft ſucculent Berry; in which are contained many flat Seeds.

We have but one *Sort* of this Plant; *viz.*

MOSCHATELLINA *foliis fumariæ bulboſæ. J. B.* Moſchatel with Leaves like thoſe of the bulbous Fumitory.

This Plant grows wild in ſhady moiſt Places in ſeveral Parts of *England*: it flowers the Latter-end of *March*, or the Beginning of *April*; and the Leaves decay about the Middle of *June*, when the Roots may be taken up, and tranſplanted. Theſe ſhould have a pretty ſtrong Soil; and if they are planted under Thickets of Shrubs, they will thrive much better than in an open Expoſure.

The Flowers are of a greeniſh-white Colour; ſo are not very beautiful: but as the Plants will thrive under Trees, and require no Care in their Culture; therefore they may have a Place in Gardens, for the ſake of Variety.

MOSS. *Vide* Muſcus.

MOTHERWORT. *Vide* Cardiaca.

MUNTINGIA.

The *Characters* are;

It hath a roſe-ſhaped Flower, conſiſting of five Leaves, which are placed in a circular Order; from whoſe Cup ariſes the Pointal, which afterward becomes a globular ſoft *fleſhy umbilicated Fruit, in which are contained many ſmall Seeds.*

The *Species* are;

1. **Muntingia** *folio ſericeo molli, fructu majori. Plum. Nov. Gen.* Muntingia with a ſoft ſilky Leaf, and a larger Fruit.

2. **Muntingia** *folio ulmi aſpero, fructu minimo glomerato. Plum. Nov. Gen.* Muntingia with a rough Elm-leaf, and the leaſt Fruit growing in Cluſters.

3. **Muntingia** *folio corni, fructu minore. Plum. Nov. Gen.* Muntingia with a Cornel-leaf, and a leſſer Fruit.

Theſe Plants are Natives of the Iſlands in *America*: the firſt Sort is figured and deſcribed by Sir *Hans Sloane*, in his *Hiſtory of Jamaica*, by the Name of *Loti arboris folio anguſtiore, rubi flore, &c.* This Sort grows thirty Feet high or upward, in its native Soil; but in *England* I have not ſeen any of them above ten Feet high: this caſts its Leaves in Winter, and will ſometimes continue without Leaves a whole Year, eſpecially if the Plants are not kept warm: the Leaves of this Sort are covered with a ſort of Down on their Under-ſide, and have three large Ribs running longitudinally in each: the Fruit is ſhaped ſomewhat like a ſmall Medlar; and when ripe, is of a dark-brown Colour: the Seeds of all theſe Sorts were ſent from *Jamaica* by Mr. *Robert Millar.*

The third and fourth Sorts ſeldom grow more than twelve or fourteen Feet high in their native Country: but in *England* I have not ſeen any above half that Height: the Leaves of the ſecond Sort reſemble thoſe of the Elm; but are extremely rough: the Flowers of this Sort are very ſmall, and are produced in Cluſters; the Fruit is about the Size of a ſmall Pea, at firſt of a yellowiſh green; but afterward turns black.

Theſe do not make any great Appearance; ſo are ſeldom cultivated in Gardens, unleſs by ſome who are curious in the Study of Plants.

They may be propagated by Seeds, which ſhould be ſown in Pots filled with light rich Earth, and plunged into a moderate Hot-bed of Tanners Bark, where they ſhould be duly watered; and in warm Weather the Glaſſes ſhould be raiſed to admit freſh Air. Theſe Seeds will often remain in the Ground a whole Year before the Plants will appear; in which Caſe the Pots muſt be kept conſtantly clear from Weeds, and ſhould remain in the Hot-bed till after *Michaelmas*, when they may be removed into the Stove, and plunged into the Bark-bed, between other Pots of tall Plants, under which they will very well ſtand; and therefore may be crouded in, where Plants will not thrive. During the Winter-ſeaſon the Pots ſhould be now and then watered, when the Earth appears dry; and in the Beginning of *March* the Pots ſhould be removed out of the Stove, and placed into a freſh Bark-bed under Frames, which will bring up the Plants ſoon after.

When the Plants are come up about two Inches high, they ſhould be carefully taken out of the Pots, and each planted into a ſeparate ſmall Pot filled with light rich Earth, and then plunged into the Hot-bed again, obſerving to ſhade them from the Sun, until they have taken new Root; after which time they ſhould be duly watered, and in warm Weather muſt have a large Share of freſh Air. In this Hot-bed the Plants may remain until the Autumn, when the Nights begin to be cold; at which time they ſhould be removed into the Stove, and plunged into the Bark-bed. During the Winter-ſeaſon theſe Plants muſt be kept warm, eſpecially while they are young, and frequently refreſhed with Water: but it muſt not be given to them in large Quantities at this Seaſon, leſt it rot the tender Fibres of their Roots. It will be proper to continue theſe Plants in the Stove all the Year; but in warm Weather they ſhould have a large Share of Air, and Plenty of Water: yet, as the Plants grow in Strength, they will be more hardy, and may be more expoſed in Summer; and in Winter will live in a dry Stove, if kept in a moderate Degree of Heat.

MULBERRY. *Vide* Morus.

MULLEIN. *Vide* Verbaſcum.

MURUCUIA.

The *Characters* are;

It hath a roſe-ſhaped Flower, conſiſting of ſeveral Leaves, which are placed in a circular Order; and is incloſed in a many-leav'd Cup: the Middle of the Flower is occupied by a Tube, ſhaped like the Trunk of a Cone; out of which ariſes the Pointal, with the Embryo on the Top, on which reſt three Clubs or Nails, and under them the Stamina: *the Embryo afterward becomes a fleſhy oval Fruit, having one Cell, which is filled with Seeds, which are covered with an Hood or Veil.*

There is but one *Species* of Murucuia; which is,

Murucuia *folio lunato. Inſt. R. H.* *Murucuia* with an horned Leaf.

This Plant is very nearly allied to the Paſſion-flower, and is by ſome Authors ranged with them; but as it differs from them in the Structure of the Flower, having a large Trunk in the Centre of the Flower, which the Paſſion-flowers have not, Dr. *Tournefort* has ſeparated it from them, and applied this Name to it, which is the *American* Name given to ſeveral Sorts of Paſſion-flowers.

It grows in *Jamaica*, from whence the Seeds may be procured. Theſe Seeds ſhould be ſown early in the Spring of the Year, on a moderate Hot-bed; and when the Plants are come up, they muſt be tranſplanted each into a ſeparate ſmall Pot, and plunged into an Hot-bed of Tanners Bark, and then managed in the ſame manner as hath been directed for the tender Sorts of Paſſion-flowers.

MUSA, The Plantain-tree.

The *Characters* are;

It is a kind of Plant with a polypetalous anomalous Flower: the upper Petal is excavated or hollowed like a little Boat, and divided into three at the Summit: the hither one is concave, but the inward one pellated, or in the Form of a Creſcent or Half-moon Shield, and accompanied with two little narrow-pointed Leaves: the Calyx *paſſes into a cucumber-ſhaped Fruit, that is ſoft, fleſhy, covered with a Skin divided, as it were, into three Loculaments, in which there appear, as it were, ſome Rudiments of Seeds.*

The *Species* are;

1. Musa *fructu cucumerino longiori. Plum. Nov. Gen.* The Plantain-tree, *vulgo*.

2. Musa *caudice maculato, fructu recto rotundo breviore odorato. Sloan. Cat.* The Banana-tree, *vulgo*.

Theſe Plants are very common in the *Eaſt* and *Weſt-Indies*, as alſo in moſt hot Countries of the World. They are carefully cultivated by the Planters in the *Weſt-Indies*, who plant them in low rich Ground, by the Sides of Gullies, where they produce Fruit moſt Parts of the Year. In *England* they are only preſerved as Curioſities, where they muſt be conſtantly kept in a Bark-ſtove; for tho' they may be kept alive in another warm Stove, yet they will make very little Progreſs therein, and do not appear half ſo beautiful, their chief Ornament being the Largeneſs of their Leaves, which are ſometimes ſix Feet long, and near two Feet broad: but as theſe Plants take up a great deal of room in the Stove, eſpecially when they arrive to a conſiderable Size; ſo it is not convenient to keep more than one Plant of each Kind.

During the Summer-ſeaſon theſe Plants muſt be plentifully watered; for the Surface of their Leaves being large, occaſions a great Conſumption of Moiſture, by Perſpiration, in hot Weather; but in the Winter they muſt be watered more ſparingly; tho' at that Seaſon they muſt be often refreſhed; but Water muſt not be given them in ſuch Quantities.

The Pots in which theſe Plants are placed ſhould be large, in proportion to the Size of the Plants; for their Roots generally extend pretty far; and the Earth ſhould be rich and light. The Degree of Heat with which theſe Plants thrive beſt, is much the ſame with the *Anana*, or Pine-apple, in which I have had many of theſe Plants produce their Fruit in Perfection; and they were near twenty Feet high.

The moſt ſure Method to have theſe Plants fruit in *England*, is, after they have grown for ſome time in Pots, ſo as to have made good Roots, to ſhake them out of the Pots with the Ball of Earth to their Roots, and plant them into the Tan-bed in the Stove, obſerving to lay a little old Tan near their Roots, for their Fibres to ſtrike into; and in a few Months the Roots of theſe Plants will extend themſelves many Feet each Way in the Bark; and theſe Plants will thrive a great deal faſter, than thoſe which are confined in Pots or Tubs. When the Bark-bed wants to be renewed with freſh Tan, there ſhould be great Care taken of the Roots of theſe Plants, not to cut or break them, as alſo to leave a large Quantity of the old Tan about them; becauſe, if the new Tan is laid too near them, it will ſcorch their Roots, and injure them. Theſe Plants muſt be plentifully ſupplied with Water, otherwiſe they will not thrive: in Winter they ſhould be watered every other Day, giving at leaſt a Gallon to each Plant; but in Summer they muſt be watered every Day, and double the Quantity given to them each time. If the Plants puſh out their Flower-ſtems in the Spring, there will be Hopes of their perfecting their Fruit; but when they come out late in the Year, the Plants will decay before the Fruit is ripe. The Stoves in which theſe Plants are placed, ſhould be at leaſt twenty-four Feet in Height, otherwiſe there will not be room for their Leaves to expand; for when the Plants are in Vigour, the Leaves are often eight Feet in Length, and near three Feet broad: ſo that if the Stems grow to be ſixteen Feet to the Diviſion of the Leaves, and the Houſe is not twenty-four Feet high, the Leaves will be cramped, which will retard the Growth of the Plants: beſides, when the Leaves are bent againſt the Glaſs, there will be Danger of their breaking them, when they are growing vigorouſly; for I have had, in one Night, the Stems of ſuch bent Leaves force thro' the Glaſs; and the next Morning advanced two or three Inches above the Glaſs.

I have ſeen ſome Branches of Fruit of the firſt Sort, which were upward of forty Pounds Weight, and perfectly ripe in *England:* but this is not ſo good a Fruit, as to tempt any Perſon to be at the Expence of raiſing them in *England:* the ſecond Sort is preferr'd to the firſt, for the Flavour of its Fruit, in all thoſe hot Countries where theſe Plants abound: the Bunches of theſe are not near ſo large as thoſe of the firſt Sort; nor are the ſingle Fruit near ſo long: theſe change to a deeper yellow Colour, as they ripen; but their Taſte is ſomewhat like that of mealy Figs. Some Perſons who have reſided in the *Weſt-Indies*, having eaten ſome of theſe Fruit, which were produced in *England*, have thought them little inferior to thoſe which grew in *America*; and I imagine, that the Inhabitants of thoſe Countries would not eſteem theſe Fruits ſo much, had they Variety of other Sorts: but, for want of better, they eat many Kinds of Fruit, which would not be valued in *Europe*, could they be obtained in Perfection.

Theſe Plants are eaſily propagated, by cutting off an old Plant near the Ground, which will occaſion their ſhooting out ſeveral young ones from the Root; which is the Manner they are propagated in the hot Countries: ſo that after a Spot of Ground is once planted with them, they will continue ſeveral Years; for the old Plant producing one large Bunch of Fruit from the Centre, when that is ripe, and cut off, the whole Plant decays, and ſeveral young ones ſpring up from the Roots, which, being produced one after another ſucceſſively, afford the Inhabitants Plants of various Size and Age, which produce their Fruit ſucceſſively in like manner.

It is the firſt of theſe Species which is chiefly cultivated in the *Weſt-Indies*; that, producing a much larger Bunch of Fruit, is by the Inhabitants greatly preferr'd to the other, which is accounted a very pleaſant Fruit when ripe, and is by many Perſons greatly coveted by way of Deſſert, being ſofter and more luſcious to the Taſte; but is not ſo much eſteemed for Food.

Theſe Plants riſe to be fifteen or twenty Feet high in the *Weſt-Indies*; to which Height they generally arrive in about ten Months from their firſt planting; ſoon after which they produce their Fruit, and then decay: they are of the quickeſt Growth of any Vegetable yet known. Sir *Hans Sloane* ſays, one may almoſt ſee them grow; he cut a young Tree even at the Top with a Knife, which immediately grew up diſcernibly; and in an Hour's time the middle Leaves, which were wrapped up within the others, were advanced above them half an Inch.

MUSCARI, Muſk, or Grape Hyacinth, *vulgo*.

The *Characters* are;

It hath a bulbous Root: the Leaves are long and narrow: the Flower is hermaphroditical, conſiſting of one Leaf, and ſhaped like a Pitcher, and cut at Top into ſix Segments, which are reflexed: the Ovary becomes a triangular Fruit, divided into three Cells, which are full of round Seeds.

The *Species* are;

1. MUSCARI *arvenſe juncifolium minus cæruleum. Tourn.* Common leſſer blue Grape-flower, or Muſcary.

2. MUSCARI *arvenſe juncifolium exalbidum minus. Tourn.* Leſſer whitiſh Grape-flower, or Muſcary.

3. MUSCARI *obſoletiore flore ex purpura virente. Cluſ.* Muſk Hyacinth, or Grape-flower, of a worn-out purple-greeniſh Colour.

4. MUSCARI *cæruleum majus. Tourn.* Greater blue Muſcary, or Grape-flower.

5. Muscari *arvenſe latifolium purpuraſcens.* *Tourn.* Broad-leav'd Muſcary or Grape-flower, with a purpliſh Flower.

6. Muscari *panicula comoſa purpuro-violacea. Boerh. Ind.* The feather'd Hyacinth, *vulgo.*

7. Muscari *flavo flore. Cluſ. Hiſt.* The yellow Muſcary, or Grape-hyacinth; commonly called *Tibcadi*, or *Dipcady.*

8. Muscari *panicula cirrhoſa purpurea, longiore & ſtrictiore. Boerh. Ind. Plant.* Muſcary or Grape-hyacinth, with a feather'd Top.

The firſt Sort is very common in moſt old Gardens, where, by its plentiful Increaſe, it is become ſo troubleſome as to render it little eſteemed; for when once theſe Roots have taken Poſſeſſion of a Garden, they are ſcarcely ever eradicated afterward; the ſmalleſt Off-ſets growing, altho' they are buried a Foot under the Surface of the Ground. This produces its Flowers in *April* and *May*; and if permitted to remain, will produce ripe Seeds in *June*: the Flowers of this Sort ſmell very like Starch.

The ſecond Sort is leſs common than the firſt, and is preſerved by ſuch as are curious in Flowers; tho' it is a Plant of no great Beauty: this is propagated by Off-ſets, as the common Hyacinth, and will thrive in almoſt any Soil or Situation; but beſt in that which is warm and dry.

The third Sort is a very deſpicable Flower, to Appearance; but is chiefly preſerved for its uncommon Sweetneſs: this is alſo increaſed as the former, and produces its Flowers much about the ſame Seaſon: but as this doth not increaſe ſo faſt as the other, the Roots may remain three Years before they are removed.

The fourth, fifth, ſixth, and eighth Sorts are alſo preſerved in curious Gardens for Variety; but neither of theſe have much Sweetneſs in their Flowers: theſe are alſo propagated by Off-ſets, as the former; but produce their Flowers later in the Seaſon.

The ſeventh Sort produces yellow Flowers, which, when they decay, change to a worn-out purpliſh Colour: the Flowers of this Kind are extremely ſweet; and having more Beauty than either of the other Sorts, it is generally more eſteemed: but this is not very common in the *Engliſh* Gardens at preſent.

There is another Sort of this, which has been lately raiſed in *Holland*, with very large orange-coloured Flowers, which have a very agreeable Scent: but this is ſo rare in *Holland*, as that the Gardeners give two Guineas for a Root of it; ſo that until the Price of theſe Roots is greatly lower'd, we can't expect to ſee this Sort in *England*; there being few Perſons here, who care to give ſuch Prices for Flowers.

The proper Seaſon for taking up the Roots of theſe Flowers is in *July*, when their Leaves are decayed; at which time they ſhould be ſpread upon Mats, in a dry Place, for a Fortnight, until their Bulbs be dry'd, when they may be laid up, each Sort by itſelf, until the Beginning of *October*, which is the Seaſon for planting moſt of thoſe bulbous-rooted Flowers; and the various Sorts of theſe may then be intermixed amongſt other Flowers of the ſame Growth; where, in the Seaſon of their Flowering, they afford an agreeable Variety. Theſe Roots ſhould never be permitted to remain longer than two Years unremoved, unleſs the third and ſeventh Sorts; for they multiply ſo faſt, that the Number of their Off-ſets would greatly weaken the blowing Roots, and cauſe their Flowers to be very ſmall; and the firſt Sort, which increaſes ſo plentifully, would fill the Borders with Off-ſets, ſo as not to be clear'd out again.

MUSCIPULA. *Vide* Lychnis.

MUSCUS, Moſs.

Theſe, tho' formerly ſuppoſed to be only Excreſcencies produced from the Earth, Trees, *&c.* yet are no leſs perfect Plants than thoſe of greater Magnitude, having Roots, Branches, Flowers, and Seeds; but cannot be propagated from the latter by any Art.

MUSHROOMS are, by many Perſons, ſuppoſed to be produced from the Putrefaction of the Dung, Earth, *&c.* in which they are found; but notwithſtanding this Notion is pretty generally received amongſt the unthinking Part of Mankind, yet, by the curious Naturaliſts, they are eſteemed perfect Plants; tho' their Flowers and Seeds have not, as yet, been diſcovered. But ſince they may, and are annually propagated by the Gardeners near *London*, and are (the eſculent Sort of them) greatly eſteemed by moſt curious Palates, I ſhall briefly ſet down the Method practiſed by the Gardeners who cultivate them for Sale.

But, firſt, it will not be improper to give a ſhort Deſcription of the true eatable Kind, ſince there are ſeveral unwholſome Sorts, which have been, by unſkilful Perſons, gathered for the Table.

The true Champignon, or Muſhroom, appears at firſt of a roundiſh Form, like a Button; the Upper-part of which, as alſo the Stalk, is very white; but being opened, the Under-part is of a livid Fleſh-colour; but the fleſhy Part, when broken, is very white: when theſe are ſuffered to remain undiſturbed, they will grow to a large Size, and explicate themſelves almoſt to a Flatneſs, and the red Part underneath will change to a dark Colour.

In order to cultivate them, if you have no Beds in your own, or in neighbouring Gardens, which produce them, you ſhould look abroad in rich Paſtures, during the Months of *Auguſt* and *September*, until you find them (that being the Seaſon when they are produced); then you ſhould open the Ground about the Roots of the Muſhrooms, where you will find the Earth, very often, full of ſmall white Knobs, which are the Off-ſets, or young Muſhrooms: theſe ſhould be carefully gathered, preſerving them in Lumps with the Earth about them: but as this Spawn cannot be found in the Paſture, except at the Seaſon when the Muſhrooms are naturally produced, you may probably find ſome in old Dunghils, eſpecially where there has been much Litter amongſt it, and the Wet hath not penetrated it to rot it; as likewiſe, by ſearching old Hot-beds, it may be often found; for this Spawn hath the Appearance of a white Mould, ſhooting out in long Strings, by which it may be eaſily known, where-ever it is met with; or this may be procured by mixing ſome long Dung from the Stable, which has not been thrown on an Heap to ferment; which being mixed with ſtrong Earth, and put under Cover to prevent Wet getting to it, the more the Air is excluded from it, the ſooner the Spawn will appear: but this muſt not be laid ſo cloſe together, as to heat; for that will deſtroy the Spawn: in about two Months after, the Spawn will appear, eſpecially if the Heap is cloſely covered with old Thatch, or ſuch Litter as hath lain long abroad, ſo as not to ferment; then the Beds may be prepared to receive the Spawn: theſe Beds ſhould be made of Dung, in which there is good Store of Litter; but this ſhould not be thrown on an Heap to ferment: that Dung which hath lain ſpread abroad for a Month or longer, is beſt: theſe Beds ſhould be made on dry Ground, and the Dung laid upon the Surface: the Width of theſe Beds at Bottom ſhould be about two Feet and an half, the Length in proportion to the Quantity of Muſhrooms deſired: then lay the Dung about a Foot thick, covering it about four Inches with ſtrong Earth: upon this lay more Dung, about ten Inches thick; then another Layer of Earth; ſtill drawing in the Sides of the Bed, ſo as to form it like the Ridge of an Houſe; which may be done by three Layers of Dung, and as many of Earth. When the Bed is finiſhed, it ſhould be covered with Litter, or old Thatch, to keep out Wet, as alſo to prevent its drying: in this Situation it may remain eight or ten Days; by which time the Bed will be in a proper Temperature of Warmth to receive the Spawn; for there ſhould be only a moderate Warmth in it, great Heat deſtroying the Spawn, as will alſo Wet; therefore when the Spawn is found, it ſhould always be kept dry until it is uſed; for the drier it is, the better it will take in the Bed: for I had a Parcel of this Spawn, which had lain near the Oven of a Stove upward of four Months, and was become ſo dry, as that I deſpaired of its Succeſs: but I never have yet ſeen any which produced ſo ſoon, nor in ſo great Quantity, as this.

The Bed being in a proper Temperature for the Spawn, the Covering of Litter ſhould be taken off, and the Sides of the Bed ſmoothed; then a Covering of light rich Earth, about an Inch thick, ſhould be laid all over the Bed; but this ſhould not be wet: upon this the Spawn ſhould be thruſt, laying the Lumps two or three Inches aſunder: then gently cover this with the ſame light Earth, above half an Inch thick; and put the Covering of Litter over the Bed, laying it ſo thick as to keep out Wet, and prevent the Bed from drying: when theſe Beds are made in the Spring or Autumn, as the Weather is in thoſe Seaſons temperate, ſo the Spawn will then take much ſooner, and the Muſhrooms will appear perhaps in a Month after making: but thoſe Beds which are made in Summer, when the Seaſon is hot, or in Winter, when the Weather is cold, are much longer before they produce.

The great Skill in managing of theſe Beds is, that of keeping them in a proper Temperature of Moiſture, never ſuffering them to receive too much Wet: during the Summer-ſeaſon, the Beds may be uncovered to receive gentle Showers of Rain at proper times; and in long dry Seaſons the Beds ſhould be now-and-then gently watered; but by no means ſuffer much Wet to come to them: during the Winter-ſeaſon they muſt be kept as dry as poſſible; and ſo cloſely covered, as to keep out Cold: in froſty or very cold Weather, if ſome warm Litter, ſhaken out of a Dung-heap, is laid on, it will promote the Growth of the Muſhrooms: but this muſt not be laid next the Bed; but a Covering of dry Litter between the Bed and this warm Litter: and as often as the Litter is found to decay, it ſhould be renewed with freſh: and as the Cold increaſes, the Covering ſhould be laid ſo much thicker. If theſe Things are obſerved, there may be plenty of Muſhrooms obtained all the Year: and theſe produced in

Beds are much better for the Table than any of thoſe which are gathered in the Fields.

A Bed thus manag'd, if the Spawn takes kindly, will continue good for ſeveral Months, and produce great Quantities of Muſhrooms; from theſe Beds, when they are deſtroy'd, you ſhould take the Spawn for a freſh Supply, which may be laid up in a dry Place until the proper Seaſon of uſing it; which ſhould not be ſooner than five or ſix Weeks, that the Spawn may have time to dry before it is put into the Bed, otherwiſe it will not ſucceed well.

Sometimes it happens, that Beds thus made do not produce any Muſhrooms till they have lain five or ſix Months; ſo that theſe Beds ſhould not be deſtroyed, though they ſhould not at firſt anſwer Expectation; for I have frequently known theſe to have produced great Quantities of Muſhrooms afterwards, and have continued a long time in Perfection.

MUSTARD. *Vide* Sinapi.

MYAGRUM, Gold of Pleaſure.

The *Characters* are;

It hath a Flower conſiſting of four Leaves, which are placed in form of a Croſs, out of whoſe Cup ariſes the Pointal, which afterward becomes a turbinated Fruit, having one Cell, in which is included one oblong Seed, and two empty Cells at the Point.

The *Species* are;

1. MYAGRUM *monoſpermum latifolium. C. B. P.* Broad-leav'd one-grain'd Gold of Pleaſure.

2. MYAGRUM *monoſpermum minus. C. B. P.* Leſſer one-grained Gold of Pleaſure.

3. MYAGRUM *capitulis rotundis. J. B.* Round-podded Gold of Pleaſure.

Theſe are all of them annual Plants, which periſh ſoon after their Seeds are ripe. They grow wild in the Corn-fields in ſeveral Parts of *Europe*; where, if the Seeds are permitted to ſcatter, the Plants will come up, and thrive better than thoſe which are ſown with Care; ſo that the beſt way to continue theſe Species is, to let the Seeds fall in Autumn, or to ſow them ſoon after they are ripe; for when they are ſown in the Spring, they very often miſcarry. When the Plants are come up, they ſhould be clear'd from Weeds; and where they are too cloſe together, they ſhould be thinned ſo as to leave them about eight or ten Inches aſunder, which is all the Culture they require.

The Oil of theſe Seeds is much uſed in *Germany*, where the Inhabitants ſow large Fields with the Seed. This Oil is frequently uſed in Medicine; but the poor People eat the Oil in Sallads and Sauces, and the Rich uſe the Oil for their Lamps; but in *England* it is very rarely uſed either way.

MYOSOTIS, Mouſe-ear Chickweed.

The *Characters* are;

It hath the whole Appearance of Chickweed; but the Flower is larger; and the Seed-veſſel is ſhap'd like an Ox's Horn, gapeing at the Top, and full of ſmall round Seeds.

The *Species* are;

1. MYOSOTIS *Hiſpanica ſegetum. Tourn.* Spaniſh Corn Mouſe-ear Chickweed.

2. MYOSOTIS *Alpina latifolia. Tourn.* Broad-leav'd Mouſe-ear Chickweed of the *Alps*.

3. MYOSOTIS *Orientalis perfoliata, folio lychnidis. Cor. Inſt.* Eaſtern Thorough-wax Mouſe-ear Chickweed, with a Campion-leaf.

There are ſeveral other Varieties of this Plant, which are preſerved in curious Botanic Gardens; but as they are of little Beauty or Uſe, I ſhall omit mentioning them in this Place. Theſe may be propagated by ſowing their Seeds in *March*, upon a Bed of freſh light Earth, in an open Situation, where they may remain to flower and ſeed; being careful to clear them from Weeds, as alſo to pull up the Plants, where they come up too thick; but they do not ſucceed well, if tranſplanted; therefore ſhould alwys remain where they are ſown.

MYOSURUS, Mouſe-tail.

This Plant is very near akin to the Ranunculus, in which Genus it is ranged by ſome Botaniſts; the Flowers are extremely ſmall, and are ſucceeded by long ſlender Spikes of Seeds, reſembling the Tail of a Mouſe, from whence it had the Name. It grows wild upon moiſt Grounds in divers Parts of *England*, where it flowers the Latter-end of *April*; and the Seeds ripen in a Month after, when the Plants decay, being annual. It is never cultivated in Gardens; ſo I ſhall not trouble the Reader with any farther Account of it.

MYRICA, The Candleberry Myrtle, *vulgo*; or Gale, or Sweet Willow; by ſome, *Myrtus Brabantica*, or *Dutch* Myrtle.

The *Characters* are;

Theſe are Male and Female in different Plants: the Male Plants produce oblong looſe ſcaly Katkins: in each of the Scales is produced one moon-ſhaped Flower, having no Petals, in each of which there are four or ſix Stamina: *the Female Flowers have no* Stamina, *but an oval Pointal, ſupporting two Styles: the Pointal afterward changes to a Berry, in which is included one roundiſh Seed.*

The *Species* are;

1. MYRICA *foliis lanceolatis, fructu ſicco. Lin. Flor. Mas & fœmina.* The Gale, Sweet Willow, or *Dutch* Myrtle, Male and Female.

2. MYRICA *foliis lanceolatis, fructu baccato. Lin. Hort. Cliff. Mas & fœmina.* Candleberry Myrtle with intire Leaves, Male and Female.

3. MYRICA *foliis lanceolatis utrinque acuminatis ſerratis; mas & fœmina.* Candleberry Myrtle with pointed ſawed Leaves, Male and Female.

4. MYRICA *foliis oblongis alternatim ſinuatis. Lin. Hort. Cliff. Mas & fœmina.* Candleberry Myrtle with Spleenwort-leaves, Male and Female.

5. MYRICA *foliis oblongis oppoſite ſinuatis. Lin. Hort. Cliff.* *African* Candleberry-tree, with oblong ſinuated Leaves, commonly called *African* Bay with Oak-leaves.

The firſt Sort grows plentifully upon Bogs in many Parts of *England*, where it riſes with many Stems from the Root, and ſometimes grows upward of four Feet high. This Sort creeps very much at the Root, when it grows upon a moiſt boggy Soil, whereby it ſoon ſpreads over a large Tract of Ground, and forms a cloſe Thicket; but it is with great Difficulty maintain'd in Gardens, eſpecially if the Soil is dry; for in ſuch Places it will ſcarce live thro' one Summer, unleſs it be frequently watered. Where this Shrub grows in plenty, it is ſo fragrant (eſpecially after a Shower of Rain) as to perfume the Air to a great Diſtance, during the Spring and Summer, when they have their Leaves; for in Winter they caſt their Leaves; though in mild Seaſons they often retain them till *Chriſtmas*, or later. The Wood of theſe Shrubs, being burnt, emits a fragrant Ordour, equal to that of the Myrtle-tree; as do the Leaves when bruiſed. There have been ſome Perſons who have gathered the Leaves of theſe Shrubs, and uſed them as Tea; which perhaps may have occaſioned a late Author to ſuppoſe it was the true *China* Tea, tho' that is a Plant very different in all its Characters from this. The young Branches of this Shrub, being cut off with their Leaves, were formerly uſed to be put into Wardrobes to keep away Moths from woolen Cloaths; as alſo to give the Cloaths an agreeable Scent. In ſome Countries this is called Gole, in others Gaule, or Gale.

Where this Shrub is deſigned to be remov'd into a Garden, the Plants ſhould be carefully taken up in the Autumn, preſerving the Roots as intire as poſſible; and if they can be taken up with a Ball of Earth to them, there will be a greater Certainty of their growing. Theſe ſhould be planted in a low ſwampy Ground, where, if they are once eſtabliſh'd, they will ſpread and multiply greatly, by their ſpreading Roots; but eſpecially where the Soil is ſoft and moory. In the Bogs where theſe Shrubs naturally grow, and form Thickets, there are commonly plenty of Woodcocks in their Seaſon.

The ſecond, third, and fourth Sorts are Natives of the Northern Parts of *America*; growing plentifully in moiſt Ground, and by the Sides of Brooks and Rivulets. The ſecond Sort was brought from *Virginia* to *England*, and hath been long an Inhabitant of ſome curious Gardens; where theſe Plants have ſometimes grown to the Height of five or ſix Feet. This produces its Branches very irregular, and without any Order; the Leaves are oblong, and for the moſt part intire, having few or no Notches on their Edges. Theſe are produced alternately on the Branches. This Sort will grow to the Height of ſeven Feet in *England*; but in *America* it often grows twelve Feet high. The Flowers or Katkins are produced in Cluſters, cloſe to the Branches, at the Setting on of the Leaves, like ſmall Bunches of Currans. Theſe Berries have an unctuous Subſtance ſurrounding the Seeds, which is collected for the making of Candies in the following manner:

In the Winter-ſeaſons, when the Berries are ripe, a Man with his Family will remove from his Habitation to ſome little Iſland or Sand-bank near the Sea, where theſe Trees chiefly abound, taking with him Kettles to boil the Berries in. He builds an Hut with Palmetto-leaves, for the Shelter of himſelf and Family while they ſtay, which is generally about a Month. The Man cuts down the Trees, while the Children ſtrip off the Berries into a Pottage-pot; and having put Water to them, they boil them till the Oil floats; which is ſkimm'd off into another Veſſel: this is repeated till there remains no more Oil. This, when cold, hardens to the Conſiſtence of Wax, and is of a dirty-green Colour. They afterwards boil it again, and clarify it in braſs Kettles; which gives it a tranſparent Greenneſs; then they make this into Candles, which burn a long time, tho' they do not give a clear Light; but are eſteem'd for the grateful Scent they emit: and in order to have a clearer Light, the Inhabitants add a Fourth-part of Tallow to this Wax.

The third Sort was diſcover'd by Mr. *Cateſby* in *Carolina*, from whence he ſent the Seeds to *England*. Of this there hath been ſince a great Number of Seeds ſent from ſeveral Parts of *America*, where it alſo grows; ſo that there are more Plants of this Sort in the Gardens, than of the former. This uſually grows about three Feet high.

The fourth Sort was diſcovered by Mr. *Clayton* in *Virginia*, growing in *Lancaſter* County, near a River: the Leaves of this Sort are deeply ſinuated, ſomewhat like thoſe of the Spleenwort; and it is narrower than either of the former Sorts. This is but of humble Growth, ſeldom riſing above three or four Feet high. All theſe three Sorts produce Berries, from whence the Wax is taken without Diſtinction. Theſe are propagated by Seeds, which are procured from *America*; and as they do not arrive in *England* till the Spring, ſo being at that Seaſon put into the Ground, the Plants ſeldom appear till the Year after: therefore the beſt Method is, to ſow the Seeds in Pots, or Tubs of Earth, placing them in a Situation where they may receive the morning Sun till Ten or Eleven o' Clock; obſerving in dry Weather to moiſten the Earth, as alſo to keep them clear from Weeds. In this Place they may remain till *October*, when they ſhould be removed into a warmer Situation for the Winter-ſeaſon; and if the Froſt ſhould be ſevere, it will be proper to cover the Earth with Straw or Peas-haulm to keep out the Froſt; and about the Beginning of *March* the Pots ſhould be placed on a moderate Hot-bed, which will bring up the Plants in a ſhort time after. All theſe Sorts delight in a moiſt Soil, and will endure the ſevereſt Cold of our Climate.

The fifth Sort is a Native of the *Cape of Good Hope*, and was brought from thence into the Gardens in *Holland*, where it hath been long an Inhabitant; and was called *Laurus Africana minor, quercus folio*: but, having produced Flowers, it appears to belong to this Genus. This Sort grows to the Height of ſix or ſeven Feet, with ſtrong woody Stems; and the Plants are generally formed into regular Heads by the *Dutch* Gardeners, who are extremely fond of training all their Plants into the Figures of Balls or Pyramids.

This Sort is too tender to live through the Winter in the open Air in *England*; therefore the Plants are kept in Pots, and placed in the Green-houſe in the Winter; where being treated in the ſame manner as the Orange-tree, they will thrive extremely well. It is propagated by laying down of the Branches; but theſe are frequently two Years before they take Root, ſo that the Plants are not very common in the Gardens. This retains its Leaves through the Winter.

MYRRHIS, Sweet Cicely.

The *Characters* are;

It is an umbelliferous Plant, with a roſe-ſhaped Flower, conſiſting of ſeveral uneqal Petals or Flower-leaves, that are placed circularly, and reſt upon the Empalement; which turns to a Fruit, compoſed of two Seeds, reſembling a Bird's Bill, chanelled and gibbous on one Side, but plain on the other.

The *Species* are;

1. MYRRHIS *magno ſemine longo ſulcato. J. B.* Sweet Cicely, or Great ſweet Chervil, and by ſome call'd *Candy* Carrot.

2. MYRRHIS *annua, ſemine ſtriato villoſo incano. M. Umb.* Annual ſweet Cicely, with hairy ſtriated Seeds, by ſome call'd *Candy* Carrot.

3. MYRRHIS *Orientalis, folio anguſtiori, peucedani ſemine villoſo. Boerh. Ind.* *Eaſtern* ſweet Cicely, with a narrow Sulphurwort-leaf, and hairy Seeds, or The true *Candy* Carrot.

There are many more Sorts of this Plant preſerved in the Gardens of ſuch as are curious in Botany; but as they are Plants of little

Uſe or Beauty, I thought it not neceſſary to enumerate them in this Place.

The firſt-mentioned is an abiding Plant, which is ſometimes uſed in Medicine: this may be propagated by ſowing the Seeds in *February* upon a Bed of light rich Earth, in a ſhady Situation; and when the Plants come up, they ſhould be tranſplanted out into the like rich Earth, in a moiſt ſhady Situation, at about two Feet aſunder; for they ſpread very wide, and take up much room (eſpecially if they are permitted to remain 2 or 3 Years unremov'd): after the Plants have taken Root, they will require no farther Care, but to keep them clear from Weeds; and they will endure ſeveral Years, and produce great Quantities of Seeds; by which, as alſo by parting the old Roots, they may be greatly increaſed. If the Seeds of this Sort are permitted to ſcatter, they will fill the Ground about the Plants with young ones, ſo as to become troubleſome Weeds.

The Seeds of the ſecond Sort are moſt commonly ſold in the Shops for thoſe of the *Daucus Creticus*; but it is the third Sort which is generally accounted the true *Daucus Creticus*; the Seeds of which are us'd in ſome of the capital Medicines of the Shops.

Theſe may be propagated by ſowing their Seeds in the Spring upon a Border of light Earth expos'd to the morning Sun, in which the Plants will riſe in about ſix Weeks after; when they may be tranſplanted out into Beds of light Earth, obſerving to water and ſhade them until they have taken Root; after which they will require no farther Care, but only to keep them clear from Weeds. The Summer following theſe Plants will produce Flowers and Seeds; ſoon after which, the ſecond Sort will decay; but the third will ſometimes abide two or three Years, and produce Seeds annually.

MYRTUS, The Myrtle.

The *Characters* are;

The Flower conſiſts of ſeveral Leaves diſpos'd in a circular Order, which expand in form of a Roſe: upon the Top of the Footſtalk is the Ovary, which has a ſhort ſtar-like Cup, divided at the Top into five Parts, and expanded: the Ovary becomes an oblong umbilicated Fruit, divided into three Cells, which are full of kidney-ſhap'd Seeds.

The *Species* are;

1. MYRTUS *communis Italica. C. B. P.* Common Myrtle, with pretty large Leaves.

2. MYRTUS *latifolia Romana. C. B. P.* Common broad-leav'd Myrtle.

3. MYRTUS *minor vulgaris. C. B. P.* Thyme-leav'd Myrtle; *vulgo.*

4. MYRTUS *folio buxi. Schuyl. Boerh. Ind.* Box-leav'd Myrtle, *vulgo.*

5. MYRTUS *foliis minimis & mucronatis. C. B. P.* Roſmary-leav'd Myrtle, *vulgo.*

6. MYRTUS *flore pleno. Corn.* Double-flowering Myrtle, *vulgo.*

7. MYRTUS *foliis odore nucis moſchatæ, cauliculis rubentibus, vulgo odore citri. Schuyl. Boerh. Ind.* The Nutmeg Myrtle, *vulgo.*

8. MYRTUS *Bætica anguſtifolia. Cluſ.* Narrow-leav'd *Spaniſh* Myrtle, commonly call'd The upright Myrtle.

9. MYRTUS *balſamica, foliis mali granatæ. H. L.* The Pomgranate-leav'd Myrtle.

10. MYRTUS *latifolia Bætica ſecunda, vel foliis laurinis confertim naſcentibus. C. B. P.* The Orange-leav'd Myrtle, *vulgo.*

11. MYRTUS *minor, foliis ex albo variegatis.* The ſtrip'd thyme-leav'd Myrtle, *vulgo.*

12. MYRTUS *foliis odore nucis moſchatæ, cauliculis rubentibus, foliis ex luteo variegatis* The ſtrip'd Nutmeg Myrtle, *vulgo.*

13. MYRTUS *foliis mucronatis, ex albo & viridi variegatis, floſculis rubro-candidis. Boerh. Ind.* The ſtrip'd thyme-leav'd Myrtle, *vulgo.*

14. MYRTUS *latifolia Romana. foliis ex luteo variegatis.* The broad-leav'd Myrtle, with ſtrip'd Leaves.

There are ſome other Varieties of theſe Plants, which are preſerved in the Gardens of the Curious; but thoſe here mention'd are what I have obſerv'd in the Gardens near *London.*

Theſe Plants may be all propagated from Cuttings; the beſt Seaſon for which is in *July,* when you ſhould make choice of ſome of the ſtraiteſt and moſt vigorous young Shoots, which ſhould be about ſix or eight Inches long; and the Leaves on the lower Part muſt be ſtripp'd off about two Inches high, and the Part twiſted which is to be placed in the Ground: then having fill'd a Parcel of Pots (in proportion to the Quantity of Cuttings deſign'd) with light rich Earth, you ſhould plant the Cuttings therein at about two Inches Diſtance from each other; obſerving to cloſe the Earth faſt about them, and give them ſome Water to ſettle it to the Cuttings; then place the Pots under a common Hot-bed-frame, plunging them either into ſome old Dung, or Tanners Bark, which will prevent the Earth from drying too faſt: but you muſt carefully ſhade them with Mats in the Heat of the Day, and give them Air in proportion to the Warmth of the Seaſon; not forgetting to water them every two or three Days, as you ſhall find the Earth in the Pots require it. With this Management, in about a Month's time, the Cuttings will be rooted, and begin to ſhoot: when you muſt inure them to the open Air by degrees, into which they ſhould be removed toward the Latter-end of *Auguſt,* placing them in a Situation where they may be ſheltered from cold Winds; in which Place they may remain till *October,* when the Pots ſhould be removed into the Green-houſe; but ſhould be plac'd in the cooleſt Part thereof, that they may have Air given to them whenever the Weather is mild; for they require only to be protected from ſevere Cold, except the orange-leav'd and the ſtrip'd Nutmeg Myrtles; which are ſomewhat tenderer than the reſt, and ſhould have a warmer Situation.

During the Winter-ſeaſon they muſt be frequently water'd; and, if any decay'd Leaves appear, they ſhould be conſtantly pick'd off, as alſo the Pots kept clear from Weeds; which, if permitted to grow, will ſoon overſpread the young Plants, and deſtroy them.

The *March* following theſe Plants ſhould be taken out of the Pots very carefully, preſerving a Ball of Earth to the Roots of each of them; and every one ſhould be placed into a ſeparate ſmall Pot fill'd with light rich Earth, obſerving to water them well to ſettle the Earth to their Roots, and place them in the ſhady Part of the Green-houſe until they have taken Root; after which they ſhould be inured to the open Air, and in *May* they muſt be expos'd to the open Air; obſerving to place them near Hedges, where they may be defended from ſtrong Winds.

During the Summer-ſeaſon they will require to be plentifully water'd, eſpecially being in ſuch ſmall Pots, which in that Seaſon ſoon dry: therefore you ſhould obſerve to place them where they ſhould receive the morning Sun; for when they are too much expos'd to the Sun in the Heat of the Day, the Moiſture contain'd in the Earth of theſe ſmall Pots will ſoon be exhal'd, and the Plants greatly retarded in their Growth thereby.

In *Auguſt* following you ſhould examine your Pots, to ſee if the Roots of the Plants have not made Way out through the Hole in the Bottom of the Pots; which if you obſerve, you muſt then ſhift them into Pots a Size bigger, filling them up with the like rich Earth; and obſerve to trim the Roots, which were matted to the Side of the Pots, as alſo to looſen the Earth from the Outſide of the Ball with your Hands: ſome of which ſhould be taken off, that the Roots may the eaſier find Paſſage into the freſh Earth: then you muſt water them well, and place the Pots in a Situation where they may be defended from ſtrong Winds: and at this time you may trim the Plants, in order to reduce them to a regular Figure; and if they are inclinable to make crooked Stems, you ſhould thruſt down a ſlender ſtrait Stick cloſe by them, to which their Stems ſhould be faſten'd, ſo as to bring them upright.

If Care be taken to train them thus while they are young, the Stems afterward, when they have acquired Strength, will continue ſtrait without any Support; and their Branches may be prun'd, ſo as to form either Balls or Pyramids; which for ſuch Plants as are preſerv'd in the Green houſe, and require to be kept in ſmall Compaſs, is the beſt Method to have them handſome: but then theſe ſhear'd Plants will not produce any Flowers; for which Reaſon that Sort with double Flowers ſhould not be clipp'd, becauſe the chief Beauty of that conſiſts in its Flowers: but it will be neceſſary to ſuffer a Plant or two of each Kind to grow rude, for the Uſe of their Branches in Noſegays, &c. for it will greatly deface thoſe which have been conſtantly ſhear'd to cut off their Branches.

As theſe Plants advance in Stature, ſo they ſhould annually be remov'd into larger Pots, according to the Size of their Roots; but you muſt be careful not to put them into Pots too large, which will cauſe them to ſhoot weak and ſtraggling, and many times prove the Deſtruction of them; therefore when they are taken out of the former Pots, the Earth about their Roots ſhould be par'd off, and that within ſide the Ball muſt be gently looſen'd, that the Roots may not be too cloſely confin'd; and then place them into the ſame Pots again, provided they are not too ſmall; filling up the Sides and Bottom of them with freſh rich Earth, and giving them plenty of Water to ſettle the Earth to their Roots, which ſhould be frequently repeated; for they require to be often water'd both in Winter and Summer; but in hot Weather they muſt have it in plenty.

The beſt Seaſon for ſhifting theſe Plants is either in *April* or *Auguſt*; for if it be done much ſooner in the Spring, the Plants are then in a ſlow-growing State, and ſo not capable to ſtrike out freſh Roots again very ſoon; and if it be done later in Autumn, the cold Weather coming on will prevent their taking Root: nor is it adviſeable in the great Heat of Summer; becauſe they will require to be very often water'd, and alſo to be plac'd in the Shade, otherwiſe they will be liable to droop for a conſiderable time: and that being the Seaſon when theſe Plants ſhould be plac'd amongſt other Exotics to adorn the ſeveral Parts of the Garden, theſe Plants, being then remov'd, ſhould not be expos'd until they have taken Root again; which at that time (if the Seaſon be hot and dry) will be three Weeks, or a Month.

In *October*, when the Nights begin to be froſty, you ſhould remove the Plants into the Green-houſe; but if the Weather proves favourable in Autumn (as it often happens), they may remain abroad until the Beginning of *November*; for if they are carry'd into the Green-houſe too ſoon, and the Autumn ſhould prove warm, they will make freſh Shoots at that Seaſon; which will be weak, and often grow mouldy in Winter, if the Weather ſhould be ſo ſevere as to require the Windows to be kept cloſely ſhut, whereby they will be greatly defac'd; for which Reaſon they ſhould always be kept as long abroad as the Seaſon will permit, and remov'd out again in the Spring before they ſhoot out; and during the Winter-ſeaſon that they are in the Green-houſe they ſhould have as much free Air as poſſible when the Weather is mild.

The two firſt-mention'd Sorts I have ſeen planted abroad in warm Situations, and upon a dry Soil; where they have endured the Cold of our Winters for ſeveral Years very well, with only being cover'd in very hard Froſts with two or three Mats, and the Surface of the Ground about their Roots cover'd with a little Mulch to prevent the Froſt from entering the Ground: but in *Cornwall* and *Devonſhire*, where the Winters are more favourable than in moſt other Parts of *England*, there are large Hedges of Myrtle which have been planted ſeveral Years, and are very thriving and vigorous, ſome of which are upward of ſix Feet high; and I believe, if the double-flowering Kind was planted abroad, it would endure the Cold as well as any of the other Sorts, it being a Native of the Southern Parts of *France*. This, and the orange-leav'd Kind, are the moſt difficult to take Root from Cuttings; but if they are planted toward the Latter-end of *July*, making choice of only ſuch Shoots as are tender, and the Pots plung'd into an old Bed of Tanners Bark, which has loſt moſt of its Heat, and the Glaſſes ſhaded every Day, they will take Root extremely well, as I have more than once experienced. The orange-leav'd Sort, and thoſe with variegated Leaves, are ſomewhat tenderer than the ordinary Sorts, and ſhould be hous'd a little ſooner in Autumn, and plac'd farther from the Windows of the Green-houſe.

MYRTUS BRABANTICA. *Vide* Gale.

MYXA. *Vide* Cordia.

N A

NAPELLUS. *Vide* Aconitum.

NAPUS, The Navew, or *French* Turneps.

The *Characters* are;

It agrees in moſt reſpects with the Turnep; but hath a leſſer Root, and ſomewhat warmer to the Taſte.

The *Species* are;

1. Napus *ſativa, radice alba.* C. B. P. Garden Navew, with a white Root.

2. Napus *ſativa, radice nigra.* C. B. P. Garden Navew, with a black Root.

3. Napus *ſylveſtris.* C. B. P. Wild Navew.

The two firſt Species of this Plant are cultivated in *France*, *Italy*, and *Germany*, in great Abundance; in which Places they are much preferr'd to common Turneps, being accounted a more delicious Food; but in *England* they have not yet ſo much obtain'd, being only cultivated by ſome curious Perſons, and are but rarely brought to the Markets.

Theſe Plants may be cultivated by ſowing their Seeds in *June*, *July*, and *Auguſt*, after the ſame manner as is practis'd for common Turneps; and when the Plants are come up, they ſhould be hoed in the like manner to deſtroy the Weeds, and cut up the Plants where they come up too thick; with this Difference only; *viz.* that theſe may be left cloſer together than common Turneps; for neither their Leaves nor their Roots grow near ſo large. The Plants, being thus clear'd from Weeds, and cut up where they are too thick, will require no farther Care until they are fit for Uſe; which (if the Seaſon proves favourable) will be in about two Months after they are ſown; when they muſt be drawn up, and treated as common Turneps. The wild Sort is pretty common upon dry Banks in moſt Parts of *England*; where it flowers early in the Spring: but is never cultivated in Gardens; but in the Iſle of *Ely* it is very much cultivated, it being the Coleſeed, from which they draw an Oil: the Seeds of this Kind are us'd in Medicine; and by moſt preferr'd to thoſe of the Garden Sort.

NARCISSO-LEUCOIUM. *Vide* Galanthus.

NARCISSUS, The Daffodil.

The *Characters* are;

It hath a Lily-flower, conſiſting of one Leaf, which is bell-ſhaped, and cut into ſix Segments, which incircle its Middle like a Crown; but the Empalement, which commonly riſes out of a membranous Vagina, *turns to an oblong or roundiſh Fruit, which is triangular, and gapes in three Parts, is divided into three Cells, and full of roundiſh Seeds.*

The *Species* are;

1. Narcissus *ſylveſtris pallidus, calyce luteo.* C. B. P. Wild *Engliſh* Daffodil.

2. Narcissus *medio luteus vulgaris. Park.* Common pale Daffodil, or Primroſe Peerleſs.

3. Narcissus *major totus luteus, calyce prælongo. C. B. P.* Great yellow *Spaniſh* Daffodil, with a long Cup.

4. Narcissus *latifolius omnium maximus, amplo calyce flavo, ſive Nonpareille. Park. Par.* The Great Nonpareil, or Nonſuch Daffodil.

5. Narcissus *parvus totus luteus. C. B. P.* Small yellow *Spaniſh* Daffodil.

6. Narcissus *luteus, florum petalis reflexis. C. B. P.* Yellow Daffodil, with the Leaves of its Flowers turning back.

7. Narcissus *multiplex totus flavus. C. B. P.* Common yellow Daffodil, with a double Flower.

8. Narcissus *incomparabilis, flore pleno, partim flavo, partim croceo. H. R. Par.* The incomparable double Daffodil, with the Flower-leaves partly yellow, and partly of a Saffron-colour.

9. Narcissus *latifolius, flore pleniſſimo, petalis majoribus candidis, minoribus aureis interpolatis. Boerh. Ind.* Nonſuch Daffodil, with a very double Flower, whoſe larger Leaves are white, but the leſſer Leaves (which are intermix'd) of a Gold-colour.

10. Narcissus *latifolius, flore pleniſſimo, petalis majoribus pallidis, minoribus flavis interpolatis. Boerh. Ind.* Nonſuch Daffodil, with a very double Flower, whoſe Leaves are of a pale Colour, which are intermix'd with ſmaller Leaves of a yellow Colour.

11. Narcissus *latifolius, flore pleniſſimo, petalis partim flavis, partim viridibus interpolatis.* Broad-leav'd Daffodil, with a very double Flower, whoſe Leaves are ſome yellow, and others green, intermix'd, commonly call'd *Tradeſcant*'s Daffodil.

12. Narcissus *Anglicus, flore pleno.* The double *Engliſh* Daffodil.

13. Narcissus *latifolius, ſulphureus vel albus, brevi calyce. C. B. P.* Broad-leav'd Daffodil, with a brimſtone-colour'd Flower, having a ſhort Cup.

14. Narcissus *latifolius ſulphureus, calycis brevis aurei ora fimbriata. Boer. Ind. Alt.* Broad-leav'd brimſtone-colour'd Daffodil, with a ſhort gold-colour'd Cup fring'd about the Edge.

15. Narcissus *medio purpureus. Hort. Eyſt.* Single Daffodil, with a white Flower, and a purple Middle.

16. Narcissus *maximus pallidus, foliis incanis. C. B. P.* Greater pale-colour'd Daffodil.

17. Narcissus *albus multiplex. Park. Par.* The double white Daffodil, or *Narciſſus.*

18. Narcissus *albus, circulo croceo. C. B. P.* The white Daffodil, with the Rim of the Cup of a Saffron-colour.

19. Narcissus *Narbonenſis, ſive medio luteus, ſerotinus major. Park. Par.* The great late-flowering Daffodil.

20. Narcissus *Orientalis albus, calyce luteo, campanulæ ſimilis maximus. C. B. P.* The *Boſſalman*'s *Narciſſus*, vulgo.

21. Narcissus *Orientalis albus, calyce luteo, medius. C B. P.* Oriental white Daffodil, with a yellow Cup.

22. Narcissus *luteus polyanthos Luſitanicus. C. B. P.* Yellow *Portugal* Daffodil, with many Flowers.

23. Narcissus *Orientalis albus minor, calyce ſulphureo pallido amplo. Boerh. Ind.* Leſſer white Oriental many-flower'd Daffodil, with an ample pale brimſtone-colour'd Cup.

24. Narcissus *pallidus medio aureus. C. B. P.* Pale Daffodil, with a golden Cup, commonly call'd *Le Soleil d'Or.*

25. Narcissus *Orientalis albus, calyce luteo, minor. C. B. P.* Leſſer white Oriental Daffodil, with a yellow Cup.

26. Narcissus *Orientalis albus, calyce ſtellato. C. B. P.* Oriental white Daffodil, with a ſtarry Cup.

27. Narcissus *Orientalis lacteus maximus, calyce pallido amplo. Boerh. Ind.* Largeſt oriental white Daffodil, with an ample pale Cup, commonly call'd, The Czar of *Muſcovy.*

28. Narcissus *Orientalis maximus lacteus, calyce pallido parvo. Boerh. Ind.* Greateſt white Oriental *Narciſſus*, with a ſmall pale-colour'd Cup.

29. Narcissus *Orientalis major polyanthos totus albus. H. Eyſt.* Great Oriental *Narciſſus*, with many white Flowers upon a Stalk.

30. Narcissus *Orientalis medius polyanthos totus albus. H. Eyſt.* Mid-

dle Oriental *Narciſſus*, with many white Flowers upon a Stalk.

31. Narcissus *Orientalis minor polyanthos totus albus. H. Eyſt.* Leſſer Oriental *Narciſſus*, with many white Flowers upon a Stalk.

32. Narcissus *juncifolius, oblongo calyce, luteus major. C. B. P.* Single yellow Jonquil, with a large oblong Cup.

33. Narcissus *juncifolius luteus minor. C. B. P.* Leſſer ſingle yellow Jonquil.

34. Narcissus *juncifolius, flore pleno. Cluſ. Cur. Poſt.* Double yellow Jonquil.

35. Narcissus *juncifolius, petalis anguſtiſſimis, calyce maximo tubam referente. Boerh. Ind.* Ruſh-leav'd Daffodil, with very narrow Petals, and a large tubulous Cup, commonly call'd The Hoop-petticoat.

36. Narcissus *juncifolius, flore pallidiore, calyce flavo. C. B. P.* Ruſh-leav'd Daffodil, with a paler Flower, and yellow Cup.

37. Narcissus *Conſtantinopolitanus polyanthos major, melino pleno flore. H. R. Par.* Greater many-flower'd Daffodil of *Conſtantinople*, with double yellow Flowers.

38. Narcissus *Cyprius luteus polyanthos, flore pleno. Lob. Adv.* Many-flower'd Daffodil of *Cyprus*, with double yellow Flowers, commonly call'd The *Cyprus Narciſſus.*

39. Narcissus *Orientalis polyanthos, pleno flore, petalis exterioribus albis, interioribus luteis, odoratiſſimus. Cleric.* Sweet-ſcented *Eaſtern* Daffodil, with many double Flowers, whoſe outer Leaves are white, and the inner Leaves yellow.

40. Narcissus *niveus, calyce flavo, odoris fragrantiſſimi. C. B. P.* Snow-white Daffodil, with a yellow Cup, and a fragrant Odour.

41. Narcissus *Orientalis polyanthos, floribus odoris fragrantiſſimi. Cler.* Many-flower'd *Eaſtern* Daffodil, with ſnow-white Flowers, and a very fragrant Odour.

42. Narcissus *Orientalis polyanthos major, flore flaveſcente ſtellato.* Greater many-flower'd *Eaſtern* Daffodil, with a yellowiſh ſtarry Flower.

43. Narcissus *Orientalis polyanthos major, flore aureo, calyce flaveſcente ſtellato.* Greater many-flower'd *Eaſtern* Daffodil, with a golden Flower, having a pale-yellow ſtarry Cup.

44. Narcissus *albus, flore minore, jaſmini odore. C. B. P.* White Daffodil, with a ſmaller Flower, ſmelling like Jaſmine.

45. Narcissus *Orientalis polyanthos albus odoratus, calyce ſtellato. Eaſtern* many-flower'd Daffodil, with white ſweet-ſcented Flowers, having a ſtarry Cup.

46. Narcissus *Americanus anguſtifolius, croci flore. Houſt.* Narrow-leav'd *American* Daffodil, with a ſaffron-colour'd Flower.

There are ſeveral other Varieties of theſe Flowers, which are annually brought over from *Holland* and *France*; where they are very induſtrious in raiſing theſe and moſt other bulbous-rooted Flowers from Seeds, whereby they continually procure ſome new Varieties, which recompenſe them for their Trouble and Expence: but in *England* there are very few Perſons who have Patience to propagate any of theſe Flowers that way, it being commonly five Years before they can expect to ſee the Fruits of their Labour: however, after the firſt five Years are paſt, if there be Seeds ſown every Year, there will be annually a Succeſſion of Flowers to ſhew themſelves; ſo that there will be a continual Expectation; which will take off the Tedioufneſs, which, during the firſt five Years, might be very troubleſome to ſome Perſons; and the annual Production of new Flowers correſponding to the annual Sowing, it will be as if the Product aroſe ſoon after.

The not practiſing this Method has occaſion'd our ſending abroad annually for great Quantities of Flower-roots, which have been kept up to an high Price, on account of the great Demand for them in *England*; whereas if we were as induſtrious to propagate them as our Neighbours, we might ſoon vie with them, if not outdo them, in moſt Sorts of Flowers; as may be eaſily ſeen, by the vaſt Variety of Carnations, Auricula's, Ranunculus's, &c. which are what have been produc'd from Seeds in *England*, and exceed every thing in thoſe Kinds of any Part of *Europe*.

I ſhall therefore firſt lay down the Method of propagating theſe Flowers from Seeds; and afterwards proceed to the neceſſary Directions for increaſing them from Off-ſets; with the manner of treating the Roots, to produce ſtrong Flowers.

You muſt be very careful, in ſaveing your Seeds, to gather none but from ſuch Flowers as have good Properties, and particularly from ſuch only as have many Flowers upon a Stalk, that flower tall, and have beautiful Cups to their Flowers; from ſuch you may expect to have good Flowers produc'd: but if you ſow ordinary Seed, it is only putting yourſelf to Trouble and Expence to no purpoſe; ſince from ſuch Seeds there can be no Hopes of procuring any valuable Flowers.

Having provided yourſelf with good Seeds, you muſt procure either ſome ſhallow Caſes, or flat Pans, made on purpoſe for the raiſing of Seedlings, which ſhould have Holes in their Bottoms, to let the Moiſture paſs off; theſe muſt be fill'd with freſh light ſandy Earth about the Beginning of *Auguſt* (that being the Seaſon for ſowing the Seeds of moſt bulbous-rooted Flowers), which muſt be levell'd very even; then ſow the Seeds thereon pretty thick, covering them over with fine-ſifted light Earth about half an Inch thick, and place the Caſes or Pans in a Situation where they may have only the morning Sun till about Ten o'Clock, where they ſhould remain until the Beginning of *October*, when they muſt be remov'd into a warmer Situation, placing them upon Bricks, that the Air may freely paſs under the Caſes, which will preſerve them from being too moiſt.

They ſhould alſo be expoſ'd to the full Sun, but ſcreen'd from the North and Eaſt Winds; and if the Froſt ſhould be ſevere, they muſt be cover'd, otherwiſe they will be deſtroy'd; in this Place they may remain until the Beginning of *April*, by which time the Plants will be up, when you muſt carefully clear them from Weeds; and if the Seaſon ſhould prove dry, they muſt be frequently water'd: the Caſes ſhould alſo now be remov'd into their former ſhady Situation; for the Heat of the noon-day Sun will be too great for the young Plants.

The latter End of *June*, when the Leaves of the Plants are decay'd, you ſhould take off the upper Surface of the Earth in the Caſes (which, by that time, will have contracted a Moſſineſs; and, if ſuffered to remain, will greatly injure the young Roots), obſerving not to take it ſo deep as to touch the Roots; then ſift ſome freſh light Earth over the Surface, about half an Inch thick; which will greatly ſtrengthen the Roots;

Roots: the ſame ſhould alſo be repeated in *October*, when the Caſes are mov'd into the Sun.

During the Summer-ſeaſon, if the Weather ſhould prove very wet, and the Earth in the Caſes appear very moiſt, you muſt remove them into the Sun till the Earth be dry again; for if the Roots receive much Wet, during the time they are unactive, it very often rots them; therefore you muſt never give them any Water after their Leaves are decay'd, but only place them in the Shade, as was before directed.

Thus you ſhould manage them the two firſt Seaſons, till their Leaves are decay'd the ſecond Summer after ſowing, when you ſhould carefully take up the Roots: which may be done by ſifting the Earth in the Caſes with a fine Sieve, whereby the Roots will be eaſily ſeparated from the Earth; then, having prepared a Bed or two of good freſh light Earth, in proportion to the Quantity of your Roots, you ſhould plant them therein, at about three Inches Diſtance every Way, and about three Inches deep in the Ground.

Theſe Beds ſhould be rais'd above the Level of the Ground, in proportion to the Moiſture of the Soil; which if dry, three Inches will be enough: but, if it be wet, they muſt be rais'd ſix or eight Inches high, and laid a little rounding, to ſhoot off the Wet.

If theſe Beds are made in the End of *July*, which is the beſt time to tranſplant the Roots, the Weeds will ſoon appear very thick: therefore you ſhould gently hoe the Surface of the Ground, to deſtroy them; being very careful not to cut ſo deep as to touch any of the Roots; and this ſhould be repeated as often as may be found neceſſary, by the Growth of the Weeds, obſerving always to do it in dry Weather, that they may be effectually deſtroy'd: and toward the Latter-end of *October*, after having intirely cleared the Beds from Weeds, you ſhould ſift a little rich light Earth over them, about an Inch thick; the Goodneſs of which will be waſh'd down to the Roots by the Winter's Rain, which will greatly encourage their Shooting in the Spring.

If the Cold ſhould be very ſevere in Winter, you ſhould cover the Beds with Peas-haulm, or ſome ſuch light Covering, to prevent the Froſt from penetrating the Ground to the Roots, which might greatly injure them while they are ſo young.

In the Spring, when the Plants begin to appear above-ground, you muſt gently ſtir the Surface of the Ground, clearing it from Weeds, *&c.* in doing of which, you ſhould be very careful not to injure the Plants: and, if the Seaſon ſhould prove dry, you ſhould now-and-then gently refreſh them with Water, which will ſtrengthen the Roots.

When their Leaves are decay'd, you ſhould clear the Beds from Weeds, and ſift a little Earth over them (as was before directed); which muſt alſo be repeated in *October*, in like manner: but the Roots ſhould not remain longer in theſe Beds than two Years; by which time their Roots will have grown ſo large as to require more room; therefore they ſhould be taken up as ſoon as their Leaves are decay'd, and planted into freſh Beds; which ſhould be dug deep, and a little very rotten Dung buried in the Bottom, for the Fibres of the Roots to ſtrike into. Then the Roots ſhould be planted at ſix Inches Diſtance, and the ſame Depth in the Ground. In the Autumn, before the Froſt comes on, if ſome rotten Tan is laid over the

Beds, it will keep out the Froſt, and greatly encourage the Roots; and, if the Winter ſhould prove ſevere, it will be proper to lay a greater Thickneſs of Tan over the Beds, and alſo in the Alleys, to keep out Froſt, or to cover them over with Straw or Peas-haulm, otherwiſe they may be all deſtroyed by the Cold. In the Spring theſe Coverings ſhould be remov'd, as ſoon as the Danger of hard Froſts is over, and the Beds muſt be kept clean from Weeds the following Summer: at *Michaelmas* they ſhould have ſome freſh Earth laid over the Beds, and covered again with Tan: and ſo every Year continu'd till the Roots flower, when you ſhould mark all ſuch as promiſe well, which ſhould be taken up as ſoon as their Leaves decay, and in Autumn planted at a greater Diſtance in new-prepar'd Beds: but thoſe which do not flower, or thoſe you do not greatly eſteem, ſhould be permitted to remain in the ſame Bed; therefore, in taking up thoſe Roots which you mark'd, you muſt be careful not to diſturb the Roots of thoſe left, and alſo to level the Earth again, and ſiſt ſome freſh Earth over the Beds (as before) to encourage the ſmall Roots; for it often happens, in the Seedlings of theſe Flowers, that at their firſt time of blowing, their Flowers do ſeldom appear half ſo beautiful as they do the ſecond or third Year: for which Reaſon none of them ſhould be rejected until they have flower'd two or three times, that ſo you may be aſſured of their Worth.

Thus having laid down Directions for the ſowing and managing theſe Roots, until they are ſtrong enough to flower; I ſhall proceed to give ſome Inſtructions for planting and managing the Roots afterwards, ſo as to cauſe them to produce large fair Flowers.

All the Sorts of *Narciſſus* which produce many Flowers upon a Stalk, ſhould have a Situation defended from cold and ſtrong Winds, otherwiſe they will be ſubject to be injured by the Cold in Winter, and their Stems broken down when in Flower: for, notwithſtanding their Stalks are generally pretty ſtrong, yet the Number of Flowers upon each renders their Heads weighty, eſpecially after Rain, which lodges in the Flowers, and, if ſucceeded by ſtrong Winds, very often deſtroys their Beauty, if they are expoſ'd thereto; ſo that a Border under an Hedge, which is open to the South-eaſt, is preferable to any other Poſition for theſe Flowers.

The morning Sun riſing upon them will dry off the Moiſture which had lodged upon them the preceding Night, and cauſe them to expand fairer than when they are planted in a ſhady Situation; and if they are too much expos'd to the afternoon Sun, they will be hurry'd out of their Beauty very ſoon; and the ſtrong Winds uſually coming from the Weſt and South-weſt Points, they will be expos'd to the Fury of them, which frequently is very injurious to them. But you ſhould not plant them under a Wall, or any other cloſe Fence; for that will reflect the Heat too greatly upon the Flowers, and alſo draw them up with weak Stems, ſo that they will not flower ſo ſtrong, nor continue ſo long in Beauty.

Having made choice of a proper Situation, you muſt then proceed to prepare the Earth neceſſary to plant them in; for if the natural Soil of the Place be very ſtrong, or poor, it will be proper to make the Border of new Earth, removing the former Soil away about three Feet deep. The beſt Earth for theſe

Flowers is a freſh light hazel Loam, mix'd up with a little very rotten Neats-dung: this ſhould be well mix'd together, and often turn'd over, in order to ſweeten it: then, having remov'd away the old Earth to the fore-mention'd Depth, you ſhould put a Laying of rotten Dung, or Tan, in the Bottom, about ſix or eight Inches thick, upon which you muſt lay ſome of the prepar'd Earth about eighteen or twenty Inches thick, making it exactly level; then, having mark'd out by Line the exact Diſtances at which the Roots are to be planted (which ſhould not be leſs than ſix or eight Inches ſquare), you muſt place the Roots accordingly, obſerving to ſet them upright; then you muſt cover them over with the before-mention'd Earth about eight Inches deep, being very careful, in doing of it, not to diſplace the Roots: when this is done, you muſt make the Surface of the Border even, and make up the Side ſtrait, which will appear handſome.

The beſt time for planting theſe Roots is toward the End of *Auguſt*; for if they are kept too long out of the Ground, it will cauſe their Flowers to be very weak. You ſhould alſo obſerve the Nature of the Soil where they are planted, and whether the Situation be wet or dry, according to which you ſhould adapt the freſh Earth, and order the Beds; for, if the Soil be very ſtrong, and the Situation moiſt, you ſhould then make choice of a light Earth, and raiſe the Beds ſix or eight Inches, or a Foot, above the Level of the Ground, otherwiſe the Roots will be in Danger of periſhing by too much Wet: but if the Situation be dry, and the Soil naturally light, you ſhould then allow the Earth to be a little ſtronger; and the Beds ſhould not be rais'd above three Inches high: for if they are made too high, the Roots will ſuffer very much, if the Spring ſhould prove dry, nor would the Flowers be near ſo fair. As alſo, in very ſevere Winters, thoſe Beds which are rais'd much above the Level of the Ground, will be more expos'd to the Cold than thoſe which are lower, unleſs the Alleys are filled up with rotten Tan, or Litter.

During the Summer, the only Culture theſe Flowers require is, to keep them free from Weeds; and when their Leaves are intirely decay'd, they ſhould be raked off, and the Beds made clean: but by no means cut off their green Leaves ſooner, as is by ſome practis'd; for that greatly weakens the Roots.

Toward the middle of *October*, if the Weeds have grown upon the Beds, you ſhould, in a dry Day, gently hoe the Surface of the Ground, to deſtroy them, obſerving to rake it over ſmooth again; and, before the Froſts come on, the Beds ſhould be cover'd over two Inches thick with rotten Tan, to keep out the Froſt; after which, they will require no farther Care till the Spring, when their Leaves will appear above-ground; at which time you ſhould gently ſtir the Surface of the Earth with a ſmall Trowel, being very careful not to injure the Leaves of the Plants, and rake it ſmooth with your Hands, clearing off all Weeds, *&c.* which, if ſuffer'd to remain at that Seaſon, will ſoon grow ſo faſt, as to appear unſightly, and will exhauſt the Nouriſhment from the Earth. With this Management theſe Roots will flower very ſtrong, ſome of which will appear in *March*, and the others in *April*; which, if ſuffered to remain, will continue in Beauty a full Month, and are, at that Seaſon, very great Ornaments to a Flower-garden.

After the Flowers are paſt, and the Leaves decay'd, you ſhould ſtir the Surface of the Ground, to prevent the Weeds from growing; and if at the ſame time you lay a little very rotten Dung over the Surface of the Beds, the Rain will waſh down the Salts thereof, which will greatly encourage the Roots the ſucceeding Year.

During the Summer-ſeaſon they will require no farther Care, but to keep them clear from Weeds, till *October*, when the Surface of the Beds ſhould be again ſtirr'd, raking off all Weeds, *&c.* and laying ſome good freſh Earth over the Beds about an Inch deep, which will compenſate the Loſs ſuſtain'd by Weeding, *&c.* and in the Spring you muſt manage as was directed for the preceding Year.

Theſe Roots ſhould not be tranſplanted oftener than every third Year; becauſe the firſt Year after removing they never flower ſo ſtrong as they do the ſecond and third; nor will the Roots increaſe ſo faſt, when they are often tranſplanted: but if you let them remain longer than three Years unremov'd, the Number of Off-ſets, which by that time will be produc'd, will weaken the large Bulbs, and cauſe them to produce very ſlender Flowers: therefore, at the time of tranſplanting them, all the ſmall Off-ſets ſhould be taken off, and planted in a Nurſery-bed by themſelves; but the large Bulbs may be planted again for Flowering. If you plant them in the ſame Bed where they grew before, you muſt take out all the Earth two Feet deep, and fill up again with freſh, in the manner before directed, which will be equal to removing them into another Place: this is the conſtant Practice of the Gardeners in *Holland*, who have but little room to change their Roots; therefore they every Year remove the Earth of their Beds, and put in freſh; ſo that the ſame Place is conſtantly occupy'd by the like Flowers.

The fifteenth Sort is pretty common in many of the Gardens near *London:* this produces only one ſingle white Flower on the Top of the Stalk, which turns on one Side, and has a purple Rim to the Cup in the Middle: it flowers the Latter-end of *April*, and the Beginning of *May*; and is very hardy.

The Eaſtern Sorts, having been lately introduced into the *Engliſh* Gardens, are not at preſent very common: but as they are all very hardy Plants, and multiply pretty faſt by Off-ſets, in few Years they will be in as great Plenty as any of the other Kinds.

The thirty-ſeventh, thirty-eighth, thirty-ninth, and fortieth Sorts are extremely worth cultivating in every good Garden, for the ſake of their beautiful ſweet-ſmelling Flowers, which continue from the Beginning of *March* to the End of *April*, unleſs the Seaſon proves very hot. The forty-fourth Sort often produces twenty Flowers on each Stalk, which are of a ſnow-white Colour, and ſmell exceeding ſweet.

The thirty-ſeventh Sort produces very double Flowers, which are larger than thoſe of the Jonquil, and a great Number of them upon each Stalk; the outer Petals of the Flower are white, and the middle are a Mixture of white and orange Petals, which make a fine Appearance; and the Flower having a moſt agreeable Scent, renders them the moſt valuable of all the Kinds. This is the firſt Sort which flowers in the Spring. Oftentimes it is in full Flower by the middle of *February*, when the Seaſon is mild; and the green Leaves always appear in *December*. Therefore the Roots of this Sort ſhould not be kept longer out of the Ground than the Beginning of *September*. Theſe ſhould alſo be planted in a warm Situation; and, in hard Froſt, cover'd with Mats, or Peas-haulm: otherwiſe the Flower-buds, which lie juſt under the Surface of the Ground, will be deſtroyed: ſo that, in ſuch Places where this Care hath not been taken, they have not produced any Flowers for ſeveral Years; which ſome ignorant Perſons have imputed to the Roots being bad.

The forty-fifth Sort was diſcover'd by the late Dr. *William Houſtoun* at *La Vera Cruz*, where it grew in great Plenty. This hath Leaves like thoſe of the Jonquil, and there is but one Flower produced on each Stalk. It is propagated by Off-ſets from the Roots, in the ſame manner as the common *Narciſſus*; but is very tender; therefore muſt be preſerv'd in the Stove, and treated after the ſame manner as the tender Kinds of *Amaryllis*, otherwiſe it will not thrive in this Country.

The common Sorts of Daffodil are generally planted in large Borders of the Pleaſure-garden; where being intermix'd with other bulbous-rooted Flowers, they afford an agreeable Variety in their Seaſons of Flowering. Theſe Roots are very hardy, and will thrive in almoſt any Soil or Situation; which renders them very proper for rural Gardens, where, being planted under the Shade of Trees, they will endure ſeveral Years without tranſplanting, and produce annually, in the Spring, great Quantities of Flowers, which afford an agreeable Proſpect.

The Jonquils ſhould be planted in Beds, or Borders, ſeparate from other Roots; becauſe theſe require to be tranſplanted at leaſt every other Year, otherwiſe their Roots are apt to grow long and ſlender, and ſeldom flower well after; which is alſo the Caſe, if they are continued many Years in the ſame Soil: wherefore the Roots ſhould be often removed from one Part of the Garden to another, or, at leaſt, the Earth ſhould be often renew'd; which is the moſt probable Method to preſerve theſe Flowers in Perfection.

The Soil in which theſe Flowers ſucceed beſt, is an hazel Loam, neither too light, nor over-ſtiff; it muſt be freſh, and free from Roots of Trees, or noxious Weeds; but ſhould not be dung'd: for it is very remarkable, that where the Ground is made rich, they ſeldom continue good very long, but are ſubject to ſhoot downwards, and form long ſlender Roots.

Theſe Flowers are greatly eſteemed by many People for their ſtrong ſweet Scent; though there are very few Ladies that can bear the Smell of them: ſo powerful is it, that, many times, it overcomes their Spirits, eſpecially if confin'd in a Room: for which Reaſon they ſhould never be planted too cloſe to an Habitation, leſt they become offenſive; nor ſhould the Flowers be placed in ſuch Rooms where Company are entertain'd.

NASTURTIUM, Creſs.

The *Characters* are;

The Flower conſiſts of four Leaves, which are placed in form of a Croſs: the Pointal, which riſes from the Centre of the Flower-cup, becomes a roundiſh ſmooth Fruit, which is divided into Cells, by the intermediate Partition, obliquely placed, with reſpect to the Valves, and furniſh'd with Seeds, which are generally ſmooth: to which may be added, The Leaves are *cut into many Parts, by which Creſs is diſtinguiſhed from Thlaſpi, or Treacle-muſtard.*

The *Species* are;

1. NASTURTIUM *hortenſe vulgatum. C. B. P.* Common Garden-creſs.

2. NASTURTIUM *hortenſe criſpum. C. B. P.* Curl'd Garden-creſs.

3. NASTURTIUM *hortenſe latifolium. C. B. P.* Broad-leav'd Garden-creſs.

4. NASTURTIUM *ſylveſtre, capſulis criſtatis. Tourn.* Swine's-creſs, or Warted Bucks-horn.

The firſt Sort is commonly cultivated in Gardens as a Sallad-herb; and is chiefly eſteem'd in the Winter and Spring, it being one of the warm Kind. During the Winter-ſeaſon, it muſt be ſown upon a gentle Hot-bed, and cover'd with either Mats or Glaſſes, to preſerve it from great Rains or Froſt, both of which are equally deſtructive at that Seaſon: in the Spring it may be ſown in warm Borders, where, if it be defended from cold Winds, it will thrive very well: but if you would continue it in Summer, you muſt ſow it upon ſhady Borders, and repeat ſowing every third Day; otherwiſe it will be too large for Uſe; for at that Seaſon it grows very faſt.

The broad-leav'd and curl'd Sorts are preſerv'd in ſome Gardens for Curioſity-ſake, and to garniſh Diſhes; but the common Sort is equally as good for Uſe. Theſe ſhould be ſown ſomewhat thinner than the common Sort, and, when the Plants come up, they ſhould be drawn out, ſo as to leave the remaining ones half an Inch aſunder, whereby they will have room to expand their Leaves, in which their Difference from the common Sorts conſiſts.

In order to preſerve theſe Varieties diſtinct, you muſt carefully ſeparate all ſuch Plants as appear inclin'd to degenerate from their Kinds, leaving only ſuch of the broad-leav'd Kind as have very fair broad Leaves; and ſo of the curl'd Sort, only ſuch as have their Leaves very much curl'd; being very careful not to intermix them together. When the Seeds are ripe, the Plants ſhould be drawn up, and ſpread upon a Cloth two or three Days to dry; after which the Seeds ſhould be beaten out, and preſerved in a dry Place for Uſe.

NASTURTIUM INDICUM. *Vide* Acriviola.

NECTARINE.

This Fruit ſhould have been placed under the Article of *Peaches*, to which it properly belongs, differing from them in nothing more than in having a ſmooth Rind, and the Fleſh being firmer. Theſe the *French* diſtinguiſh by the Name of *Brugnon*, as they do thoſe Peaches which adhere to the Stone, by the Name of *Pavies*, retaining the Name of *Peſche* to ſuch only as part from the Stone: but ſince the Writers in Gardening have diſtinguiſhed this Fruit by the Name of *Nectarine* from the *Peaches*, ſo I ſhall follow their Example, leſt, by endeavouring to rectify their Miſtakes, I ſhould render myſelf leſs intelligible to the Reader. I ſhall therefore mention the ſeveral Sorts of this Fruit which have come to my Knowlege:

1. *Fairchild*'s Early Nectarine. This is one of the earlieſt ripe Nectarines we have: it is a ſmall round Fruit, about the Size of the Nutmeg Peach, of a beautiful red Colour, and well-flavoured: it ripens the Middle of *July*.

2. *Elruge* Nectarine: the Tree has ſawed Leaves: the Flowers are ſmall: it is a middle-ſiz'd Fruit, of a dark-red or purple Colour next

the Sun; but of a pale-yellow or greeniſh Colour toward the Wall; it parts from the Stone, and has a ſoft melting Juice: this ripens in the End of *July*.

3. *Newington* Nectarine: the Tree has ſawed Leaves: the Flowers are large and open: it is a fair large Fruit (when planted on a good Soil) of a beautiful red Colour next the Sun: but of a bright yellow towards the Wall: it has an excellent rich Juice: the Pulp adheres cloſely to the Stone, where it is of a deep red Colour: this ripens the Beginning of *Auguſt*, and is the beſt-flavoured of all the Sorts.

4. Scarlet Nectarine is ſomewhat leſs than the laſt, of a fine red or ſcarlet Colour next the Sun; but loſes itſelf in paler red toward the Wall: this ripens in the End of *July*.

5. *Brugnon* or *Italian* Nectarine has ſmooth Leaves: the Flowers are ſmall: it is a fair large Fruit of a deep-red Colour next the Sun; but of a ſoft-yellow toward the Wall: the Pulp is firm, of a rich Flavour, and cloſely adheres to the Stone where it is very red: this ripens in the Middle of *Auguſt*.

6. *Roman* Red Nectarine has ſmooth Leaves, and large Flowers: it is a large fair Fruit, of a deep-red or purple Colour toward the Sun; but has a yellowiſh Caſt next the Wall: the Fleſh is firm, of an excellent Flavour, cloſely adhering to the Stone, where it is very red: this ripens in the Middle of *Auguſt*.

7. Murry Nectarine is a middle-ſiz'd Fruit, of a dirty red Colour on the Side next the Sun; but of a yellowiſh green towards the Wall: the Pulp is tolerably well flavoured: this ripens the Middle of *Auguſt*.

8. Golden Nectarine is a fair handſome Fruit, of a ſoft-red Colour next the Sun; but of a bright-yellow next the Wall: the Pulp is very yellow, of a rich Flavour; and cloſely adheres to the Stone, where it is of a faint-red Colour: this ripens the Beginning of *September*.

9. *Temple*'s Nectarine is a middle-ſiz'd Fruit, of a ſoft-red Colour next the Sun; but of a yellowiſh-green toward the Wall: the Pulp is melting, of a white Colour toward the Stone, from which it parts, and has a fine poignant Flavour: this ripens in the Middle of *September*.

10. *Peterborough* or Late-green Nectarine is a middle-ſiz'd Fruit, of a pale-green Colour on the Outſide next the Sun; but of a whitiſh-green toward the Wall: the Fleſh is firm, and, in a good Seaſon, well-flavoured: this ripens at the End of *September*.

There are ſome Perſons who pretend to have more Sorts than I have here ſet down; but I much doubt whether they are different from thoſe here mention'd, there being ſo near Reſemblance between the Fruits of this Kind, that it requires a very cloſe Attention to diſtinguiſh them well, eſpecially if the Trees grow in different Soils and Aſpects; which many times alters the ſame Fruit ſo much as hardly to be diſtinguiſh'd by Perſons who are very converſant with them: therefore, in order to be thoroughly acquainted with their Differences, it is neceſſary to conſider the Shape and Size of their Leaves, the Size of their Flowers, their Manner of ſhooting, *&c.* which is many times very helpful in knowing of theſe Fruits.

The Culture of this Fruit differing in nothing from that of the Peach, I ſhall forbear mentioning any thing on that Head in this Place, to avoid Repetition; but refer the Reader to the Article *Perſica*, where there is an ample Account of their *Planting*, *Pruning*, &c.

NEPETA. *Vide* Cataria.

NERIUM, The Oleander, or Roſe-bay.

The *Characters* are;

The Flowers are monopetalous and funnel-ſhap'd, divided into five Segments at the Top: out of the Flower-cup ariſes the Pointal, which becomes a taper Fruit, or Pod, divided into two Cells by an intermediate Partition, and filled with flat Seeds, which have Down adhering to them.

The *Species* are;

1. NERIUM *floribus rubeſcentibus*. C. *B. P.* Oleander with red Flowers.

2. NERIUM *floribus albis. C.B.P.* Oleander with white Flowers.

3. NERIUM *Indicum anguſtifolium, floribus odoratis ſimplicibus, H.L.* Narrow-leav'd *Indian* Oleander, with ſingle ſweet-ſcented Flowers.

4. NERIUM *Indicum latifolium, floribus odoratis plenis. H. L.* Broad-leav'd *Indian* Oleander, with double ſweet-ſcented Flowers.

5. NERIUM *Indicum, flore variegato odorato pleno. H. Amſt. Indian* Oleander, with double ſweet-ſcented variegated Flowers, commonly call'd *South-Sea* Roſe.

6. NERIUM *floribus ex albo & roſeo variegatis. Tourn. Cor.* Oleander, or Roſe-bay, with a white Flower ſtrip'd with Red.

7. NERIUM *Indicum latifolium, flore rubro majore.* Broad-leav'd *Indian* Oleander, with a larger red Flower.

The firſt and ſecond Sorts are very common in the *Engliſh* Gardens, where they are preſerv'd in Pots or Tubs, and placed amongſt Myrtles, Oranges, *&c.* in the Green-houſe: they are pretty hardy Plants, and only require to be ſheltered from hard Froſt; for in moderate Winters I have known them ſtand abroad in warm Borders; but in hard Froſts they are often deſtroy'd, if expos'd thereto.

Theſe may be placed in Winter in an ordinary Green-houſe among Bays, *&c.* which require a great Share of free Air, and only want Protection from hard Froſts; where they will thrive better than if plac'd in a warmer Houſe, or kept too cloſe in Winter. They are propagated from Suckers, which they ſend forth from their Roots in great Plenty, or by laying down their tender Branches, which will take Root in one Year: the time for laying them down is in the Beginning of *April*; and the Year following the Layers ſhould be taken off, when they ſhould be planted into Pots filled with freſh rich Earth, obſerving to place them in the Shade, until they have taken Root; after which they may be expoſed with Myrtles, Geraniums, *&c.* in ſome Place where they may be ſheltered from ſtrong Winds. During the Summer-ſeaſon they muſt be plentifully watered, otherwiſe they will make but poor Progreſs, and produce very few Flowers; but if they are conſtantly ſupplied with Water; they will make a fine Appearance during the Months of *July* and *Auguſt*, when they will be covered with Flowers. In Winter they muſt be frequently refreſhed with Water, but it ſhould not be given them in large Quantities at that Seaſon.

The third, fourth, fifth, and ſeventh Sorts are tenderer than the others; therefore require a warmer Situation in Winter; nor muſt they be expoſed to the open Air in Summer; for if they are placed abroad, their Flowers will not open; ſo that in Winter they ſhould be placed in a warm Green-houſe, and in Summer they ſhould be removed into an airy Glaſs-caſe, where they may be defended from the Cold of the Nights; but in the Day-time they ſhould have a large Share of free Air, obſerving to give them plenty of Water, which will cauſe them to produce their Flowers large, and in great Quantities. Theſe Plants are Natives of the *Spaniſh Weſt-Indies*, from whence they were brought into the *Engliſh* Colonies in *America*, where they were planted for the Beauty of their Flowers; but ſince the Inhabitants have found they deſtroy their Cattle which have browzed on the Plants, they uſually root them out near their Settlements.

Theſe Sorts alſo flower in *July* and *Auguſt*, when they make a beautiful Appearance; for they produce their Flowers in very large Bunches; and the Flowers of the fourth and fifth Sorts are very large and double, and the Smell of them very much reſembles that of White-thorn, which makes them deſerving of a Place in every good Green-houſe.

Theſe Plants may be propagated from Suckers or Layers, as the two former; but they do not produce Suckers in ſo great Plenty as thoſe in this Country. They all grow naturally on the Sides of Rivers, and moiſt Places; ſo that they may have plenty of Water.

The ſixth Sort was diſcovered by Dr. *Tournefort* in the *Levant*. This is very rare at preſent in *Europe*; but is as hardy as the common Sort, and may be propagated in the ſame manner.

The third Sort produces fleſh-coloured Flowers, of the ſame Size and Shape as thoſe of the common Sort; but have a very muſky Scent, ſo that they perfume the Houſe in which they are placed, when they are in Flower. The Flowers of this Kind will not open fair, if they are expoſed in the open Air; ſo that they ſhould be placed in a Stove or Glaſs-caſe in Summer, with the two double Kinds, and the ſeventh Kind; where they will make a beautiful Appearance, and continue a long time in Flower.

All the Sorts ſhould be ſhifted every Spring, about the Beginning of *April*; when the Suckers, or Layers, which are rooted, muſt be taken off, and planted into Pots fill'd with light rich Earth. The Roots of the old Plants muſt be trimmed, and as much of the Earth taken from their Roots, as may be done without Injury to the Plants, and the Pots filled with freſh rich Earth, which will encourage the Plants to produce a great Number of Flowers.

NICOTIANA, Tobacco.

The *Characters* are;

The Flower conſiſts of one Leaf, is funnel-ſhaped, and divided at the Top into five deep Segments, which expand like a Star: the Ovary becomes an oblong or roundiſh membranaceous Fruit, which is divided into two Cells by an intermediate Partition, and is fill'd with ſmall roundiſh Seeds.

The *Species* are;

1. NICOTIANA *major latifolia*. *C. B. P.* The greater broad-leav'd Tobacco.

2. NICOTIANA *major anguſtifolia*. *C. B. P.* The greater narrow-leav'd Tobacco.

3. NICOTIANA *major anguſtifolia perennis. Juſſieu.* The greater narrow-leav'd perennial Tobacco.

4. NICOTIANA *minor. C. B. P.* The leſſer or common *Engliſh* Tobacco.

5. NICOTIANA *minor, foliis rugoſioribus amplioribus. Vaill.* Leſſer Tobacco, with larger and rougher Leaves.

6. NICOTIANA *major latifolia, floribus*

floribus albis, vaſculo brevi. Martyn. Cent. 1. Greater broad-leav'd Tobacco, with white Flowers, and a ſhort Seed-veſſel.

7. Nicotiana *humilis, primulæ veris folio. Houſt.* Dwarf Tobacco, with a Primroſe-leaf.

8. Nicotiana *minor, folio cordiformi, tubo floris prælongo. Feuillée.* Smaller Tobacco, with an heart-ſhaped Leaf, and a Flower with a longer Tube.

The firſt Sort is known by the Planters in *America* under the Title of *Oronooko*; of which there ſeem to be two different Kinds, varying in the Largeneſs and Texture of their Leaves, ſome having very broad, rough, roundiſh Leaves; and others are narrower, ſmoother, and terminate in a Point: but neither of theſe Sorts are eſteem'd by the *American* Planters, becauſe the Produce of this, tho' it is much greater than the narrow-leav'd Sort, yet it is not near ſo much eſteem'd by the *Engliſh*. This Sort is commonly cultivated in *Germany*, about *Hanover* and *Straſburgh*; and is ſomewhat hardier than the narrow-leav'd Sorts; which renders it preferable to that for cultivating in Northern Climates.

This Plant is ordered by the College of Phyſicians for medicinal Uſe, and is what ſhould be made uſe of for the *Unguentum Nicotianæ* (or Ointment of Tobacco); tho' many times the leſſer or *Engliſh* Tobacco is brought to Market for that Purpoſe.

The narrow-leav'd Sort is commonly call'd the ſweet-ſcented Tobacco, from its having a much more agreeable Scent, when ſmok'd, than the broad-leav'd Sort: the Smoke of which is very offenſive to moſt Perſons who have not been accuſtom'd to it. This Sort is cultivated in great Plenty in *Virginia, Cuba, Braſil*, and ſeveral other Parts of *America*: from whence it is brought to moſt Parts of *Europe*, but eſpecially to *England*, it being prohibited to be cultivated in this Country, leſt his Majeſty's Revenues ſhould be thereby leſſened: but as a ſmall Quantity is permitted to be cultivated for medicinal Uſe, I ſhall briefly ſet down the Method how it may be propagated, ſo as to have fair large Leaves for that Purpoſe.

The Seeds of this Plant muſt be ſown upon a moderate Hot-bed in *March*; and when the Plants are come up, they ſhould be tranſplanted into a new Hot-bed of a moderate Warmth, about four Inches under each Way, obſerving to water and ſhade them until they have taken Root: after which you muſt let them have Air in proportion to the Warmth of the Seaſon, otherwiſe they will draw up very weak, and be thereby leſs capable of enduring the open Air: you muſt alſo obſerve to water them frequently; but while they are very young, they ſhould not have too great Quantities of Water; tho' when they are pretty ſtrong, they will require to have it often, and in plenty.

In this Bed the Plants ſhould remain until the Beginning of *May*; by which time (if they have ſucceeded well) they will touch each other: therefore they ſhould be enured to the open Air gradually: after which they muſt be taken up carefully, preſerving a large Ball of Earth to each Root, and planted into a rich light Soil, in Rows four Feet aſunder, and the Plants three Feet Diſtance in the Rows, obſerving to water them until they have taken Root; after which they will require no farther Care (but only to keep them clear from Weeds) until the Plants begin to ſhew their Flower-ſtems; at which time you ſhould cut off the Tops of them, that their Leaves may be the better nouriſhed, whereby they will be rendered larger, and of a thicker Subſtance. In *Auguſt* they will be full-grown, when they ſhould be cut for Uſe; for if they are permitted to ſtand longer, their Under-leaves will begin to decay.

The perennial Sort was brought from the *French* Settlements in the *Weſt-Indies* into the Royal Garden at *Paris*, where it is cultivated in ſmall Quantities, for making Snuff. The Seeds of this Kind I received from Monſieur *de Juſſieu*, Demonſtrator of the Plants in the Royal Garden: it has ſucceeded very well in the Phyſic-garden, and abides the Winter in a common Green-houſe without artificial Heat.

The two ſmaller Sorts of Tobacco are preſerved in Botanic Gardens for Variety; but are ſeldom propagated for Uſe. The firſt Sort is found growing upon Dunghils in divers Parts of *England*. Theſe are both very hardy, and may be propagated by ſowing their Seeds in *March*, upon a Bed of light Earth, where they will come up, and may be tranſplanted into any Part of the Garden.

The firſt of theſe Sorts is the moſt common in *England*, and is generally raiſed by the Gardeners near *London*, who ſupply the Markets with Pots of Plants to adorn Balconies and Shop-windows in the City. This Sort, when raiſed early in the Spring, and planted in a rich Soil, will grow to the Height of ten or twelve Feet, provided the Plants are duly watered in dry Weather.

The ſixth Sort of Tobacco was found growing wild in the Iſland of *Tobago*, by Mr. *Robert Millar*, Surgeon, who ſent the Seeds into *Europe*, which have ſucceeded in ſeveral curious Gardens. This Sort produces broader and rounder Leaves than the common Sort, which are leſs veined, and very glutinous. The Plants uſually grow about five Feet high, and the Flowers of this are white, in which it differs from all the other Sorts.

Both theſe Sorts are as hardy as the common broad-leav'd Kind, and are propagated in the ſame manner as hath been directed for that.

The ſeventh Sort was diſcovered by the late Dr. *William Houſtoun*, at *La Vera Cruz*; from whence he ſent the Seeds, and dried Samples of the Plant. This Sort is very different from all the other Kinds in the manner of its Growth; for the Leaves of this Plant grow in Tufts near the Ground. Out of the Middle of theſe Leaves, ariſes the Flower-ſtem, which is naked, having no Leaves upon it, to the Height of eighteen Inches, or a little more, and divides into many ſmall Branches, on which ſtand the Flowers on ſhort Footſtalks, which are of a greeniſh-yellow Colour.

The eighth Sort was diſcovered by Father *Feuillée* in the *Spaniſh Weſt-Indies*. This Sort commonly grows between three or four Feet high, and divides into ſeveral ſmall Branches: the Leaves of this Sort are ſhaped like an Heart, and the Flowers are of a greeniſh-yellow Colour.

Theſe two Sorts, being ſomewhat tenderer than the former, ſhould be ſown early in the Spring on an Hot-bed; and when the Plants come up, they ſhould be tranſplanted on another moderate Hot-bed; where they muſt be duly watered, and ſhould have a large Share of free Air in warm Weather; and when the Plants have obtained a good Share of Strength, they ſhould be tranſplanted into ſeparate Pots, and plunged into a moderate Hot-bed to bring them forward: about the middle of *June* ſome of the Plants may be ſhaken out of the Pots, and planted into rich Earth; but it will be proper to keep two Plants of each Kind in Pots, which may be placed in the Stove (in caſe the Seaſon ſhould prove bad), that they may ripen their Seeds, ſo that the Species may be preſerved.

NIGELLA, Fenel-flower, or Devil in a Buſh.

The *Characters* are;

The Flower-cup conſiſts of five Leaves, which expand in the Form of a Star, and branch out into many other ſmall narrow Leaves: the Flower conſiſts of many Leaves placed orbicularly, and expand in form of a Roſe, having many ſhort Stamina *ſurrounding the Ovary on the Centre of the Flower; which Ovary becomes a membranaceous Fruit, conſiſting of ſeveral Cells, which are furniſhed with Horns on the Top, and are full of Seeds.*

The *Species* are;

1. NIGELLA *arvenſis cornuta. C. B. P.* Wild horned Fenel-flower.

2. NIGELLA *latifolia, flore majore ſimplici cæruleo. C. B. P.* Broad-leav'd Fenel-flower, with a large ſingle blue Flower.

3. NIGELLA *anguſtifolia, flore majore ſimplici cæruleo. C. B. P.* Narrow-leav'd Fenel-flower, with a large ſingle blue Flower.

4. NIGELLA *anguſtifolia, flore majore ſimplici albo. C. B. P.* Narrow-leav'd Fenel-flower, with a large ſingle white Flower.

5. NIGELLA *flore majore pleno cæruleo. C. B. P.* Double blue Nigella, or Fenel-flower.

6. NIGELLA *flore minore ſimplici candido. C. B. P.* Fenel-flower with a ſmall white ſingle Flower.

7. NIGELLA *flore minore, pleno & albo. C. B. P.* Fenel-flower with a ſmall double white Flower.

8. NIGELLA *Orientalis, flore flavo, ſemine alato plano. Tourn. Cor.* Oriental Fenel-flower, with a yellow Flower, and a flat wing'd Seed.

9. NIGELLA *Cretica latifolia odorata. Park. Theat.* Broad-leav'd ſweet-ſcented *Candy* Fenel-flower.

There are ſome other Varieties of this Plant, which are preſerv'd in ſome curious Botanic Gardens; but thoſe here mention'd are what I have obſerv'd cultivated in the *Engliſh* Gardens at preſent.

All theſe Plants may be propagated by ſowing their Seeds upon a Bed of light Earth, where they are to remain (for they ſeldom ſucceed well, if tranſplanted): therefore, in order to have them intermix'd amongſt other annual Flowers, in the Borders of the Flower-garden, the Seeds ſhould be ſown in Patches at proper Diſtances; and when the Plants come up, you muſt pull up thoſe which grow too cloſe, leaving but three or four of them in each Patch, obſerving alſo to keep them clear from Weeds; which is all the Culture they require. In *July* they will produce their Flowers, and their Seeds will ripen in *Auguſt*, when they ſhould be gather'd and dried; then rub out each Sort ſeparately, and preſerve them in a dry Place,

The Seaſon for ſowing theſe Seeds is in *March*; but if you ſow ſome of them in *Auguſt*, ſoon after they are ripe, upon a dry Soil, and in a warm Situation, they will abide in Winter, and flower ſtrong the ſucceeding Year: by which Method they may be continued in Beauty moſt Part of the Summer.

The fifth Sort is that which is moſt commonly cultivated in *England*;

land; the Seeds of which are ſold in the Seed-ſhops: but the other Sorts deſerve to be preſerv'd as much as that; for the various Sorts, when rightly intermix'd, will afford an agreeable Variety. They are all annual Plants, which periſh ſoon after they have perfected their Seeds; which, if permitted to ſcatter upon the Borders, will come up without any farther Care. The Plants commonly grow about a Foot high, and, if they have a good Soil, will ſend forth many Branches, each of which terminates in a Flower.

NIGELLASTRUM. *Vide* Lychnis Segetum major.

NIGHTSHADE. *Vide* Solanum.

NIL. *Vide* Anil.

NISSOLIA, Crimſon Graſs-vetch, *vulgo*.

The *Characters* are;

It hath a papilionaceous Flower, like the Lathyrus, to which this Plant agrees in every reſpect, excepting the Leaves, which in this are produced ſingly, and are not terminated by Claſpers.

The *Species* are;

1. Nissolia *vulgaris. Tourn.* Common Crimſon Graſs-vetch.
2. Nissolia *Orientalis, flore purpureo. Tourn. Cor.* Eaſtern Graſs-vetch, with a purple Flower.
3. Nissolia *Americana procumbens, folio rotundo, flore luteo. American* trailing Vetch, with a round Leaf, and a yellow Flower.

The firſt Sort is found wild in ſeveral Parts of *England*, growing commonly by the Sides of Foot-paths; but is not very common near *London*: I have gathered it in a Field juſt before you come to *Putney-common*, on the Left-hand Side of the Road, under the Hedge which parts the Field from the Road.

This Plant may be cultivated by ſowing the Seeds in *Auguſt*, ſoon after they are ripe, on any Soil, or in any Situation; where they will riſe ſoon after, and endure the Cold of our Climate very well, and flower early the ſucceeding Spring; but if you ſow the Seeds in the Spring, the Plants commonly decay before they come to flower, as I have ſeveral times experienced: therefore you need only to let the Seeds fall upon the Ground when they are ripe, and they will grow without further Trouble, but only to keep them clear from Weeds.

The Flowers of this Plant are ſmaller than thoſe of the Sweet-pea; but are much the ſame in Shape, and of a fine ſcarlet Colour: ſo that being intermix'd in large Borders amongſt theſe and other annual Plants, it makes a pretty Variety, and deſerves a Place in every good Garden.

The ſecond Sort was diſcovered by Dr. *Tournefort* in the *Levant*: this is an hardy Plant, and may be ſown in the full Ground, and treated as the common Sort; but the third Sort is more tender. This was diſcover'd by the late Dr. *William Houſtoun*, near *La Vera Cruz*. The Seeds of this Plant ſhould be ſown on a moderate Hot-bed, early in the Spring; and, when the Plants are come up, they ſhould be frequently refreſh'd with Water; and in warm Weather the Glaſſes of the Hot-bed ſhould be raiſed a little every Day, to admit freſh Air to the Plants, which will cauſe them to grow ſtrong; and in about a Month's time they will be fit to tranſplant; when they ſhould be taken up carefully, and each planted into a ſmall Pot fill'd with light Earth, and then plunged into a moderate Hot-bed of Tanners Bark; obſerving to ſhade them from the Sun in the Heat of the Day, until they have taken new Root: after which time they ſhould have a large Share of Air in warm Weather, and be frequently refreſh'd with Water. The Plants may remain in the Hot-bed until Autumn, when the Cold begins to come on: at which time they ſhould be remov'd into the Stove, and plunged into the Bark-bed; where, if they are carefully managed, they will live through the Winter, and flower early the following Summer, ſo will perfect their Seeds.

NOLI ME TANGERE. *Vide* Balſamina Mas.

NONSUCH, or FLOWER of BRISTOL. *Vide* Lychnis.

NUMMULARIA, Money-wort, or Herb Two-pence.

This Plant grows wild in ſhady moiſt Places in divers Parts of *England:* but as it is ſeldom preſerved in Gardens, I ſhall ſay nothing of its Culture in this Place.

NURSERY, or Nurſery-garden, is a Piece of Land ſet apart for the raiſing and propagating of all Sorts of Trees and Plants, to ſupply the Garden, and other Plantations. Of this Sort, there are a great Number in the different Parts of this Kingdom; but particularly in the Neighbourhood of *London*, which are occupied by the Gardeners, whoſe Buſineſs it is to raiſe Trees, Plants, and Flowers, for Sale: and in many of theſe there is at preſent a much greater Variety of Trees and Plants cultivated, than can be found in any other Part of *Europe*. In *France*, their Nurſeries (which are but few, when compared with thoſe in *England)* are chiefly confined to the Propagation of Fruit-trees; from whence they have the Appellation of *Pepinier*. For there is ſcarce any of thoſe Gardens, where a Perſon can be ſupplied either with Ever-greens, Flowering-ſhrubs, or Foreſt-trees. And in *Holland*, their Nurſeries are principally for Flowers: ſome few of them indeed propagate tender Exotic Plants. But thoſe Nurſeries in the Neighbourhood of *London* do, ſeveral of them, include all theſe; and from hence moſt of the curious Perſons abroad are ſupplied with Furniture for their Gardens. But I do not propoſe, in this Place, to treat of theſe extenſive Nurſeries, or to give a Deſcription of them; therefore ſhall confine myſelf to treat of ſuch Nurſeries only as are abſolutely neceſſary for all Lovers of Planting to have upon the Spot, where they deſign to make their Plantation. For if theſe are large, the Expence of carrying a great Number of Trees, if the Diſtance is great, will be no ſmall Article, beſide the Hazard of their growing; which, when Plants have been train'd up in good Land, and remov'd to an indifferent one, is very great. Therefore it is of the utmoſt Conſequence to every Planter, to begin by making of a Nurſery. But in this Article I muſt beg Leave to obſerve, that a Nurſery ſhould not be fix'd to any one particular Spot: I mean by this, that it would be wrong to continue the raiſing of Trees any Number of Years upon the ſame Spot of Ground; becauſe hereby the Ground will be ſo much exhauſted by the Trees, as to render it unfit for the ſame Purpoſe. Therefore all good Nurſery-gardeners do ſhift and change their Land, from time to time; for when they have drawn off the Trees from a Spot of Ground, they either plant Kitchen-herbs, or other things, upon the Ground for a Year or two; by which time, as alſo by dunging and trenching of the Land, it is recover'd, and made fit to receive other Trees. But this they are obliged to from Neceſſity, being confined to the ſame Land; which is not the Caſe with thoſe Gentlemen, who have a large Extent of Ground in the Country. Therefore all ſuch Perſons I would adviſe to make Nurſeries upon the Ground which is intended for Planting, where a ſufficient Number of the Trees may be left ſtanding, after the others have been drawn out, to plant in other Places; which, for all large-growing Trees, but particularly ſuch as are cultivated for Timber, will be found by much the moſt advantageous Method; for all thoſe Trees which come up from the Seed, or which are tranſplanted very young into the Places where they are deſign'd to remain, will make a much greater Progreſs, and become larger Trees, than any of thoſe which are tranſplanted at a greater Age. Therefore the Nurſeries ſhould be thinned early, by removing all thoſe Trees which are intended for other Plantations, while they are young; becauſe hereby the Expence and Trouble of ſtaking, watering, *&c.* will be ſaved, and the Trees will ſucceed much better. But in expos'd Situations, where there are Nurſeries made, it will be neceſſary to permit the Trees to ſtand much longer; that, by growing cloſe together, they may ſhelter each other, and draw themſelves up: and theſe ſhould be thinned gradually, as the Trees advance; for, by taking away too many at firſt, the Cold will check the Growth of the remaining Trees. But then thoſe Trees which are taken out from theſe Nurſeries, after a certain Age, ſhould not be depended on for Planting; and it will be Prudence rather to conſign them for Fuel, than by attempting to remove them large; whereby, in endeavouring to get them up with good Roots, the Roots of the ſtanding Trees will be often much injur'd.

What has been here propos'd, muſt be underſtood for all large Plantations in Parks, Woods, *&c.* but thoſe Nurſeries which are only intended for the raiſing of Evergreens, Flowering-ſhrubs, or Plants which are deſign'd to embelliſh Gardens, may be confin'd to one Spot; becauſe a ſmall Compaſs of Ground will be ſufficient for this Purpoſe. Two or three Acres of Land employ'd this way, will be ſufficient for the moſt extenſive Deſigns; and one Acre will be full enough for thoſe of moderate Extent. And ſuch a Spot of Ground may be always employed for ſowing the Seeds of foreign Trees and Plants; as alſo for raiſing many Sorts of biennial and perennial Flowers, to tranſplant into the Borders of the Pleaſure-garden; and for raiſing many Kinds of bulbous-rooted Flowers from Seeds; whereby a Variety of new Sorts may be obtain'd annually, which will recompenſe for the Trouble and Expence; and will moreover be an agreeable Diverſion to all thoſe Perſons who delight in the Amuſements of Gardening.

Such a Nurſery as this ſhould be conveniently ſituated for Water; for where that is wanting, there muſt be an Expence attending the Carriage of Water in dry Weather. It ſhould alſo be as near the Houſe as it can with Conveniency be admitted, in order to render it eaſy to viſit at all Times of the Year; becauſe it is abſolutely neceſſary, that it ſhould be under the Inſpection of the Maſter; for, unleſs he delights in it, there will be little Hopes of Succeſs. The Soil of this Nurſery ſhould alſo be good, and not too heavy and ſtiff; for ſuch Land will be very improper for ſowing

ing moſt Sorts of Seeds; becauſe, as this will detain the Moiſture in the Spring and Winter, ſo the Seeds of moſt tender Things, eſpecially of Flowers, will rot in the Ground, if ſown early. Therefore where Perſons are confined to ſuch Land, there ſhould be a good Quantity of Sand, Aſhes, and other light Manures, buried, in order to ſeparate the Parts, and pulverize the Ground; and if it is thrown up in Ridges, to receive the Froſt in Winter, it will be of great Uſe to it; as will alſo the frequent forking or ſtirring of the Ground, both before and after it is planted.

The many Advantages which attend the having ſuch a Nurſery, are ſo obvious to every Perſon who has turn'd his Thoughts in the leaſt to this Subject, that it is needleſs for me to mention them here: and therefore I ſhall only beg Leave to repeat here what I have ſo frequently recommended; which is, the carefully keeping the Ground always clean from Weeds: for if theſe are permitted to grow, they will rob the young Trees of their Nouriſhment. Another principal Buſineſs is, to dig the Ground between the young Plants at leaſt once every Year, to looſen it for the Roots to ſtrike out: but, if the Ground is ſtiff, it will be better to be repeated twice a Year; *viz.* in *October* and *March*; which will greatly promote the Growth of the Plants, and prepare their Roots for tranſplanting.

But as there may be ſome Perſons who may have the Curioſity to raiſe their own Fruit-trees, I ſhall next treat of the proper Method to make a Nurſery of theſe Trees.

In the doing of which you muſt obſerve the following Rules:

1. That the Soil in which you make the Nurſery be not better than that where the Trees are to be planted out for good: the not obſerving this, is the Reaſon that Trees are often at a Stand, or make but little Progreſs for three or four Years, after they come from the Nurſery; as it commonly happens to ſuch Trees as are raiſed near *London*, and carried into the Northern Parts of *England*; where being planted in a poor Soil, and a much colder Situation, the Trees ſeldom ſucceed well: therefore it is by far the better Method (when you have obtained the Sorts you would propagate) to raiſe a Nurſery of the ſeveral Sorts of Stocks proper for the various Kinds of Fruit, upon which you may bud or graft them; and thoſe Trees which are thus raiſed upon the Soil, and in the ſame Degree of Warmth, where they are to be planted, will ſucceed much better than thoſe brought from a greater Diſtance, and from a richer Soil.

2. This Ground ought to be freſh, and not ſuch as has been already worn out by Trees, or other large-growing Plants; for in ſuch Soil your Stocks will not make any Progreſs.

3. It ought not to be too wet, nor over-dry, but rather of a middling Nature: though, of the two Extremes, dry is to be preferr'd; becauſe in ſuch Soils (though the Trees do not make ſo great a Progreſs as in moiſt, yet) they are generally ſounder, and more diſpoſed to Fruitfulneſs.

4. You muſt alſo obſerve to incloſe it, that Cattle and Vermin may not come in; for theſe will make great Havock with young Trees, eſpecially in Winter, when the Ground is cover'd with Snow, that they have little other Food which they can come at. Some of the moſt miſchievous of theſe Animals are Hares

and Rabbets, which are great Deſtroyers of young Trees at that Seaſon, by eating off all their Bark; therefore you muſt carefully guard your Nurſery againſt theſe Enemies.

The Ground, being incloſed, ſhould be carefully trenched about eighteen Inches or two Feet deep, provided it will allow it: this ſhould be done in *Auguſt*, that it may be ready to receive young Stocks at the Seaſon for Planting, which is commonly at the Beginning of *October*. In trenching of the Ground, you muſt be very careful to cleanſe it from the Roots of all noxious Weeds; ſuch as Couch-graſs, Docks, *&c.* which, if left in the Ground, will get in among the Roots of the Trees, ſo as not to be gotten out afterwards; and will ſpread, and overrun the Ground, to the great Prejudice of your young Stocks.

After having dug the Ground, and the Seaſon being come for Planting, you muſt level down the Trenches as equal as poſſible; and then lay out the Ground into Quarters, proportionable to the Size thereof; and thoſe Quarters may be laid out in Beds, for the ſowing of Seeds, or the Stones of Fruit.

The beſt Sort of Stocks for Peaches, Nectarines, *&c.* are ſuch as are raiſed from the Stones of the Muſcle and white Pear-plum; but you ſhould never plant Suckers of theſe (which is what ſome People practiſe); for theſe ſeldom make ſo good Stocks, nor are ever well-rooted Plants: beſides, they are very ſubject to produce great Quantities of Suckers from their Roots, which are very troubleſome in the Borders or Walks of a Garden, and greatly injure the Tree; ſo that you ſhould annually, or at leaſt every other Year, ſow a few Stones of each, that you may never be at a Loſs for Stocks.

For Pears, you ſhould have ſuch Stocks as have been raiſed from the Kernels of the Fruit where Perry hath been made; or elſe preſerve the Seeds of ſome Sorts of Summer Pears, which generally ſhoot ſtrong and vigorous, as the Cuiſſe Madame, Windſor, *&c.* but, when this is intended, the Fruit ſhould be ſuffered to hang upon the Trees till they drop, and afterward permitted to rot; then take out the Kernels, and put them in Sand, being careful to keep them from Vermin, as alſo to place them where they may not be too damp, which will cauſe them to grow mouldy. Theſe you ſhould ſow for Stocks early in the Spring, upon a Bed of good freſh light Earth; where they will come up in about ſix Weeks, and, if kept clear from Weeds, will be ſtrong enough to tranſplant out the *October* following. But for many Sorts of Summer and Autumn Pears, Quince Stocks are preferable to Free *(i. e.* Pear) Stocks. Theſe are generally uſed for all the Sorts of ſoft-melting Pears; but they are not ſo good for the breaking Pears, being apt to render thoſe Fruits which are grafted upon them ſtony. Theſe are very often propagated from Suckers, which are generally produced in Plenty from the Roots of old Trees: but thoſe are not near ſo good as ſuch as are propagated from Cuttings or Layers, which have always much better Roots, and are not ſo ſubject to produce Suckers as the other; which is a very deſirable Quality, ſince theſe Suckers do not only rob the Trees of Part of their Nouriſhment, but are very troubleſome in a Garden.

Apples are grafted or budded upon

on Stocks raiſed from Seeds which come from the Cyder-preſs, or upon Crab-ſtocks; the latter of which are eſteemed for their Durableneſs, eſpecially for large Standard-trees. Theſe ſhould be raiſed from Seeds, as the Pear-ſtock, and muſt be treated in the ſame manner: for thoſe procured from Suckers, &c. are not near ſo good; but for ſmall Gardens, the Paradiſe-ſtock hath been for ſome Years paſt greatly eſteem'd; it being of very humble Growth, cauſeth the Fruit-trees grafted or budded thereon to bear very ſoon, and they may be kept in ſmall Compaſs: but theſe are only proper for very ſmall Gardens, or by way of Curioſity; ſince the Trees thus raiſed are but of ſhort Duration, and ſeldom ariſe to any Size to produce Fruit in Quantities, unleſs the Graft or Bud be buried in Planting, ſo that they put forth Roots; and then they will be equal to Trees grafted upon Free-ſtocks, ſince they receive but ſmall Advantage from the Stock.

For Cherries, you ſhould make uſe of Stocks raiſed from the Stones of the common Black, or the wild Honey-cherry; both of which are ſtrong free Growers, and produce the cleaneſt Stocks.

For Plums, you may uſe the Stones of moſt free-growing Sorts; which will alſo do very well for Apricots, theſe being not ſo difficult to take as Peaches or Nectarines; but (as I ſaid before) theſe ſhould not be raiſed from Suckers, for the Reaſon there aſſigned, but rather from Stones.

There are ſome Perſons who recommend the Almond-ſtock for ſeveral Sorts of tender Peaches, upon which they will take much better than upon Plum-ſtocks: but theſe being tender in their Roots, and apt to ſhoot early in the Spring, and being of ſhort Duration. are by many People rejected: but ſuch tender Sorts of Peaches which will not take upon Plum-ſtocks, ſhould be budded upon Apricots, upon which they will take very well; and all Sorts of Peaches which are planted upon dry Soils, will continue much longer, and not be ſo ſubject to Blight, if they are upon Apricots: for it is obſerved, that upon ſuch Soils where Peaches ſeldom do well, Apricots will thrive exceedingly; which may be owing to the Strength and Compactneſs of the Veſſels in the Apricots, which render it more capable of aſſimilateing or drawing its Nouriſhment from the Plum-ſtock, which in dry Soils ſeldom afford it in great Plenty to the Bud; and the Peach-tree, being of a looſe ſpongy Nature, is not ſo capable to draw its Nouriſhment therefrom; which occaſions that Weakneſs which is commonly obſerved in thoſe Trees when planted on a dry Soil; therefore it is the common Practice of the Nurſery-gardeners, to bud the Plum-ſtocks either with Apricots, or ſome free-growing Peach; and after theſe have grown a Year, they bud the tender Sorts of Peaches upon theſe Shoots; by which Method many Sorts ſucceed well, which in the common way will not thrive, or ſcarce keep alive; and theſe the Gardeners term double-work'd Peaches.

Some People of late have budded and grafted Cherries upon Stocks of *Corniſh*, and others the Morello Cherry, which, they ſay, will render the Trees more fruitful, and leſs luxuriant in Growth, ſo that they may be kept in leſs Compaſs; theſe Stocks having the ſame Effect upon Cherries, as the Paradiſe-ſtock hath on Apples.

Having provided yourſelf with young Stocks of all theſe different Sorts, which ſhould be raiſed in the Seminary the preceding Year, you ſhould proceed to tranſplanting of them in *October* (as before directed) into the Nurſery. The Diſtance at which they ſhould be planted, if deſigned for Standards, ſhould be three Feet and an half, or four Feet, Row from Row, and a Foot and an half diſtant in the Rows; but if for Dwarfs, three Feet Row from Row, and one Foot in the Rows, will be a ſufficient Diſtance.

In taking theſe Stocks out of the Seed-beds, you muſt raiſe the Ground with a Spade, in order to preſerve the Roots as intire as poſſible; then with your Knife you ſhould prune off all the very ſmall Fibres; and if there are any which have a Tendency to root down-right, ſuch Roots ſhould be ſhortened: then having thus prepared the Plants, you ſhould draw a Line acroſs the Ground intended to be planted, and with your Spade open a Trench thereby exactly ſtrait, into which you ſhould place them at the Diſtance before-mention'd, ſetting them exactly upright; and then put the Earth in cloſe to them, filling up the Trench, and with your Foot preſs the Earth gently to the Roots of them; obſerving not to diſplace them ſo as to make the Rows crooked, which will render them unſightly. Theſe Plants ſhould by no means be headed, or pruned at Top, which will weaken them, and cauſe them to produce lateral Branches, and thereby ſpoil them.

If the Winter ſhould prove very cold, it will be of great Service to your young Stocks, to lay ſome Mulch upon the Surface of the Ground near their Roots, which will prevent the Froſt from penetrating the Ground ſo as to hurt the tender Fibres which were produced after planting: but you ſhould be careful not to let it lie too thick near the Stems of the Plants, nor remain too long, leſt the Moiſture ſhould be prevented from penetrating to the Roots of the Plants; which it often does, where there is not due Care taken to remove it away as ſoon as the Froſt is over.

In the Summer-ſeaſon, you muſt always obſerve to hoe and deſtroy the Weeds; which, if permitted to remain in the Nurſery, will greatly weaken and retard the Growth of your Stocks: and, the ſucceeding Years, you ſhould obſerve to dig up the Ground every Spring between the Rows; which will looſen it ſo, as that the Fibres may eaſily ſtrike out on each Side, and the Weeds will be thereby deſtroyed: you ſhould alſo obſerve, where any of the Stocks have ſhot out lateral Branches, to prune them off, that they may be encouraged to grow upright and ſmooth.

The ſecond Year after planting, ſuch of the Stocks as are deſigned for Dwarf-trees, will be fit to bud; but thoſe which are deſigned for Standards, ſhould be ſuffer'd to grow five or ſix Feet high before they are budded or grafted. The manner of Budding and Grafting being fully deſcribed under their reſpective Heads, I ſhall not repeat them in this Place; nor need I ſay any thing more of treating theſe Trees after budding, that being alſo treated of under the ſeveral Articles of Fruits: I ſhall only add, that thoſe Stocks which were budded in the Summer, and have failed, may be grafted the following Spring; but Peaches and Nectarines never take well from Grafts; theſe ſhould therefore be always budded.

The Ground you intend for the Flower-nurſery, ſhould be well ſituated to the Sun; but defended from ſtrong Winds by Plantations of Trees, or Buildings; and the Soil ſhould be light and dry, which muſt always be obſerved, eſpecially for bulbous-rooted Flowers, which are deſigned to be planted therein: the Particulars of which are exhibited under the ſeveral Articles of Flowers.

In this Nurſery ſhould be planted the Off-ſets of all your bulbous-rooted Flowers, where they are to remain until they become blowing Roots; when they ſhould be removed into the Pleaſure-garden, and planted either in Beds or Borders, according to the Goodneſs of the Flowers, or the Management which they require.

You may alſo, in this Ground, raiſe the ſeveral Sorts of bulbous-rooted Flowers from Seed, by which means new Varieties may be obtained; but moſt People are diſcouraged from ſetting about this Work, from the Length of Time before the Seedlings will come to flower: however, after a Perſon hath once begun, and conſtantly continued ſowing every Year, after the Parcel firſt ſown has flower'd, the regular Succeſſion of them coming annually to flower, will not render this Method ſo tedious as it at firſt appear'd.

The ſeedling Auricula's, Polyanthus's, Ranunculus's, Anemonies, Carnations, *&c.* ſhould be raiſed in this Nurſery, where they ſhould be preſerved until they have flower'd; when you ſhould mark all ſuch as are worthy of being tranſplanted into the Flower-garden; which ſhould be done in their proper Seaſons: for it is not ſo well to have all theſe ſeedling Flowers expoſed to public View in the Flower-garden; becauſe it always happens, that there are great Numbers of ordinary Flowers produced amongſt them, which will make but an indifferent Appearance in the Pleaſure-garden.

NUX AVELLANA. *Vide* Corylus.

NUX JUGLANS. *Vide* Juglans.

NUX VESICARIA. *Vide* Staphylodendron.

NYMPHÆA, The Water-lily.

The *Characters* are;

The Flower conſiſts of ſeveral Leaves, which expand in form of a Roſe: out of the Flower-cup ariſes the Pointal, which afterward becomes an almoſt globular Fruit conſiſting of many Cells fill'd with Seeds, which are for the moſt part oblong.

The *Species* are;

1. Nymphæa *alba major. C. B. P.* The great white Water-lily.

2. Nymphæa *lutea major. C. B. P.* The great yellow Water-lily.

3. Nymphæa *lutea minor, flore fimbriato. J. B.* The leſſer yellow Water-lily, with a fringed Flower.

There are ſome other Species of this Plant, all of which are Natives of deep-ſtanding Waters, and therefore not to be cultivated in any other Places.

The beſt Method to propagate theſe Plants is, to procure ſome of their Seed-veſſels juſt as they are ripe, and ready to open: theſe ſhould be thrown into Canals, or large Ditches of ſtanding Water, where the Seeds will ſink to the Bottom; and the following Spring the Plants will appear floating upon the Surface of the Water, and in *June* and *July* will produce their beautiful large Flowers. When they are once fix'd to the Place, they will multiply exceedingly, ſo as to cover the whole Surface of the Water in a few Years.

In ſome ſmall Gardens I have ſeen theſe Plants cultivated in large Troughs of Water, where they have flouriſh'd very well, and have annually produced great Quantities of Flowers: but as the Expence of theſe Troughs is pretty great (their Inſides requiring to be lined with Lead, to preſerve them), ſo there are few People who care to be at that Charge.

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OAK. *Vide* Quercus.

OBELISCOTHECA. *Vide* Rudbeckia.

OCHRUS, Winged Pea.

The *Characters* are;

It hath a papilionaceous Flower, out of whoſe Empalement riſes the Pointal, which afterward becomes a Pod, for the moſt part round and cylindrical, filled with roundiſh Seeds: to theſe Notes muſt be added, That the Leaves are ſometimes ſimple, and ſometimes conjugated, ending in Tendrils.

The *Species* are;

1. OCHRUS *folio integro, capreolos emittente, ſemine ſubluteo. C. B. P.* Ochrus or winged Pea, with an intire Leaf, ſending forth Tendrils, and a yellowiſh Seed.

2. OCHRUS *folio integro, capreolos emittente, ſemine pullo. C. B. P.* Ochrus or winged Pea, with an intire Leaf, ſending forth Tendrils, and a brown Seed.

3. OCHRUS *folio integro, capreolos emittente, ſemine atro. C. B. P.* Ochrus or winged Pea, with an intire Leaf, ſending forth Tendrils, and a black Seed.

4. OCHRUS *folio diviſo in capreolos abeunte. Inſt. R. H.* Ochrus or winged Pea, with a divided Leaf ending in Tendrils.

5. OCHRUS *Americanus tomentoſus, floribus luteis. Plum.* Woolly Ochrus or winged Pea of *America*, with yellow Flowers.

The three firſt Sorts are accidental Varieties, which differ in the Colour of their Flowers and Seeds; but in every other reſpect are the ſame, ſo that they may be deemed only ſeminal Variations. They are annual Plants, which muſt be ſown in the Spring of the Year, on an open Border or Bed of light freſh Earth; allowing the ſame Diſtance, as is uſual for the middle Sort of Peas. The better Way is to ſow them in Drills, about two Feet aſunder; and when the Plants are come up, the Earth ſhould be drawn to them, in the ſame manner as is practiſed for Peas: and when the Plants begin to riſe in Height, there ſhould be ſome Sticks put down by them, to which they will faſten their Tendrils, whereby they will be ſupported from trailing on the Ground; for want of which, in bad Seaſons, they do not ripen their Seeds kindly. The Ground between the Rows ſhould always be kept clean from Weeds, which, if permitted to grow, will ſoon overbear the Plants, and deſtroy them. About the Middle of *June* the Plants will flower, and their Seeds will ripen the Beginning of *Auguſt*.

Theſe Plants grow wild in *Lombardy*, and in ſome Parts of *Spain*; but in *England* they are preſerved in the Gardens of ſome Perſons who are curious in Botany, for the ſake of Variety. The Seeds of theſe have been eaten in times when there has been a Scarcity of other Proviſion, by the poor Inhabitants where they naturally grow; but they are bitter, and hard of Digeſtion, and do not afford good Nouriſhment.

The fourth Sort was diſcovered by Dr. *Tournefort* in the *Levant*, from whence he ſent the Seed to the Royal Garden at *Paris*, where it flouriſhed, and has ſince been diſtributed to ſeveral Perſons who are curious in collecting of Plants. This is as hardy as the common Sort; ſo may be ſown and treated after the ſame manner.

The fifth Sort was diſcovered by Father *Plumier* in *America*, and ſince by the late Dr. *William Houſtoun* at *Campechy*. The Seeds of this Sort muſt be ſown on an Hot-bed early in the Spring; and when the Plants come up, they ſhould be tranſplanted each into a ſeparate Pot, and plunged into a moderate Hot-bed, where they ſhould have a large Share of free Air in warm Weather, and muſt be frequently refreſh'd with Water. About the Beginning of *July* theſe Plants will flower, and their Seeds will ripen in Autumn.

OCULUS CHRISTI. *Vide* Horminum ſylveſtre.

OCYMUM, Baſil.

The *Characters* are;

It hath a labiated Flower, conſiſting of one Leaf, whoſe Creſt (or Upper-lip) is upright, roundiſh, notched, and larger than the Beard (or Lower-lip), which is generally curled, or gently cut: out of the Flower-cup ariſes the Pointal, attended by four Embryoes, which afterward become ſo many Seeds incloſed in an Huſk, which was before the Flower-cup: this Huſk is divided into two Lips; the upper one growing upright, and is ſplit into two; but the under one is cut into ſeveral Parts.

The *Species* are;

1. Ocymum *vulgatius*. *C. B. P.* Common Baſil.

2. Ocymum *vulgatius, foliis ex nigro vireſcentibus, flore albo. H. R. P.* Common Baſil, with dark-green Leaves, and white Flowers.

3. Ocymum *minus anguſtifolium, foliis ſerratis. C. B. P.* Leſſer Baſil, with narrow ſerrated Leaves.

4. Ocymum *minus anguſtifolium, foliis bullatis H. R. P.* Leſſer narrow-leav'd Baſil, with warted Leaves.

5. Ocymum *minimum. C. B. P.* The leaſt Baſil, commonly called Buſh-baſil.

6. Ocymum *minimum, foliis ex purpura nigricantibus. H. R. P.* The leaſt Baſil, with dark-purple Leaves.

7. Ocymum *citri odore. C.B.P.* Baſil with a Citron-ſcent.

8. Ocymum *latifolium maculatum vel criſpum. C. B. P.* Broad-leav'd Baſil, with curled ſpotted Leaves.

9. Ocymum *foliorum fimbriis ad endiviam accedentibus, maximum. H.L.* The greateſt Baſil, with Leaves fringed like Endive.

10. Ocymum *foliis fimbriatis viridibus. C. B. P.* Baſil with fringed green Leaves.

11. Ocymum *caryophyllatum maximum. C. B. P.* The greateſt Baſil, ſmelling like Cloves.

12. Ocymum *aniſi odore. C.B.P.* Baſil ſmelling like Aniſe.

13. Ocymum *minus anguſtifolium, foliis ſerratis. C. B. P.* The ſmaller narrow-leav'd Baſil, with ſawed Leaves.

14. Ocymum *tricolor. H. R. Par.* Three-coloured Baſil.

15. Ocymum *nigrum majus, acuto rutæ odore. H. L.* Greater black Baſil, with the quick Smell of Rue.

16. Ocymum *Campechianum odoratiſſimum. Houſt.* The moſt ſweet-ſmelling Baſil of *Campechy*.

17. Ocymum *Zeylanicum perenne fruteſcens, folio calaminthæ nonnihil ſimili. Boerh. Ind. Alt.* Shrubby perennial Baſil of *Ceylon*, with a Leaf not unlike Calamint.

Theſe Plants, being annual, are propagated from Seeds, which ſhould be ſown in *March*, upon a moderate Hot-bed: and when the Plants are come up, they ſhould be tranſplanted into another moderate Hot-bed, obſerving to water and ſhade them until they have taken Root; after which they ſhould have plenty of Air in mild Weather, otherwiſe they will draw up very weak: you muſt alſo water them frequently, for they love Moiſture. In *May* they ſhould be taken up with a Ball of Earth to their Roots, and tranſplanted either into Pots or Borders, obſerving to ſhade them until they have taken Root; after which they will require no farther Care, but to clear them from Weeds, and refreſh them with Water in dry Weather. Though theſe Plants are only propagated from Seeds, yet, if you have any particular Sort which may ariſe from Seeds, which you are deſirous to increaſe, you may take off Cuttings any time in *May*, and plant them on a moderate Hot-bed, obſerving to water and ſhade them for about ten Days; in which time they will take Root, and in three Weeks time will be fit to remove either into Pots or Borders, with the ſeedling Plants. In *Auguſt* theſe Plants will perfect their Seeds; when thoſe Sorts which appear the moſt diſtinct, ſhould have their Seeds preſerved ſeparate, for ſowing the following Spring

The firſt is what the College of Phyſicians have preſcribed for medicinal Uſe; and this alſo is uſed in the Kitchen; but the fifth Sort is moſt eſteemed for its Beauty and Scent, by thoſe who cultivate them to adorn their Gardens.

The Seeds of theſe Plants are uſually brought from the South of *France* or *Italy*, every Spring; becauſe they ſeldom ripen their Seeds in this Country, in the open Air. But whoever is curious to preſerve the Seeds of any of the Varieties, ſhould place them into an airy Glaſs-caſe or Stove, in the Autumn, when the Weather begins to be cold or wet; and by ſupplying them with Water, and letting them have free Air every Day in mild Weather, they will perfect their Seeds very well in this Country.

The ſixteenth Sort is more tender than any of the other. This was diſcovered growing wild at *Campechy*, by the late Dr. *William Houſtoun*, who ſent the Seeds to *England*. This ſhould be ſown on an Hot-bed early in the Spring; and when the Plants are come up, they ſhould be tranſplanted on another very temperate Hot-bed, to bring them forward; and when they have obtained Strength, they ſhould be each tranſplanted into a ſeparate Pot, and placed either in the Stove, or on a moderate Hot-bed, where they may have a large Share of Air in warm Weather; but by being ſheltered from the Cold and Wet, the Plants will perfect their Seeds very well in *England*.

The ſeventeenth Sort grows to be ſhrubby, and, if placed in a moderate Warmth in Winter, may be preſerved two or three Years; but this will ripen its Seeds the firſt Year, if the Plants are brought forward in the Spring: but if this ſhould fail, the Plants may be placed in the Stove, where they may be kept through the Winter; and the following Seaſon they will perfect their Seeds. In the Summer the Plants ſhould be placed in the open Air, in a ſhelter'd Situation; and in warm Weather they ſhould have plenty of Water.

OENANTHE, Water Dropwort.

The *Characters* are;

It is an umbelliferous Plant, whoſe Flower conſiſts of many heart-ſhap'd Leaves, which expand in form of a Roſe: the Ovary is fix'd to the Top of the Empalement, which turns to a Fruit compos'd of two oblong Seeds, that are gibbous, and ſtreak'd on one Side, and plain on the other; ending, as it were, in ſome Prickles, the middlemoſt of which is ſtronger than the reſt.

The *Species* are;

1. OENANTHE *cicutæ facie Lobelli. Park. Theat.* Hemlock Dropwort.

2. OENANTHE *aquatica. C.B.P.* Water Dropwort.

There are ſeveral other Species of this Plant, ſome of which are Natives of *England*; but as they are not uſeful, nor of any Beauty, I ſhall omit enumerating them in this Place.

The firſt of thoſe here mention'd is very common by the Sides of the *Thames* on each Side *London*, as alſo by the Sides of large Ditches and Rivers in divers Parts of *England*: this Plant commonly grows four or five Feet high with ſtrong-jointed Stalks; which, being broken, emit a yellowiſh fetid Juice: the Leaves are ſomewhat like thoſe of the common Hemlock, but are of a lighter-green Colour: the Roots divide into four or five large taper ones, which, when ſeparated, have ſome Reſemblance to Parſneps; for which ſome ignorant Perſons have taken and boil'd them, whereby themſelves and Family have been poiſon'd.

The poiſonous Quality of this Plant hath led ſome Perſons to believe it is the *Cicuta* of the Antients: but, according to *Wepfer*, the *Sium alterum oluſatri facie* of *Lobel* is what the Antients call'd *Cicuta*; as may be ſeen at larger in *Wepfer*'s Book *De Cicuta*.

The ſecond Sort is very common in moiſt Soils, and by the Sides of Rivers, in divers Parts of *England*: this is not ſuppos'd to be near ſo ſtrong as the firſt, but is of a poiſonous Quality.

All the Sorts of theſe Plants naturally grow in moiſt Places; ſo that whoever hath a mind to cultivate them, ſhould ſow their Seeds ſoon after they are ripe in Autumn, upon a moiſt Soil; where they will come up, and thrive exceedingly the following Summer, and require no farther Care but to clear them from Weeds.

OLDENLANDIA.

The *Characters* are;

It hath a roſe-ſhaped Flower, conſiſting of one Leaf, which is divided into four Parts almoſt to the Bottom, and reſts on the Empalement: which Empalement afterward becomes an almoſt globular Fruit, having two Cells, which contain many ſmall Seeds.

We have but one *Species* of this Plant; which is,

OLDENLANDIA *humilis hyſſopifolia. Plum. Nov. Gen.* Dwarf Oldenlandia, with an Hyſſop-leaf.

This Plant was diſcovered in *America* by Father *Plumier*, who gave this Name to it in Honour to *Henry Bernard Oldenland*, a *German*, who was a Diſciple of Dr. *Herman* at *Leyden*, and was a very curious Botaniſt.

The Seeds of this Plant were ſent into *England* by Mr. *Robert Millar*, who gathered them in *Jamaica*. It is a low annual Plant, which ſeldom riſes above three or four Inches high, and divides into many Branches, which ſpread near the Ground. Theſe Branches are furniſhed with long narrow Leaves, which are placed by Pairs oppoſite to each other.. From the Wings of the Leaves ariſes the Flower-ſtalk, which grows about an Inch, or a little more, in Length, and divides into three or four ſmaller Footſtalks: on the Top of each of theſe, ſtands one ſmall white Flower.

The Seeds of this Plant ſhould be ſown early in the Spring, on an Hot-bed; and when the Plants are come up, they ſhould be tranſplanted on another Hot-bed, or into ſmall Pots, and plunged into a moderate Hot-bed of Tanners Bark, obſerving to water and ſhade them until they have taken Root; after which time, they muſt have a large Share of free Air in warm Weather, and muſt be frequently refreſhed with Water. With this Management the Plants will flower in *June*, and their Seeds will ripen ſoon after; ſo that the Seeds muſt be gathered from time to time as they ripen; for as the Branches grow larger, ſo there will be freſh Flowers produced until Autumn, when the Plants will periſh: but if the Seeds are permitted to ſcatter in the Pots, the Plants will ſoon appear; which will live through the Winter, provided they are placed in the Stove; ſo will flower early the following Spring.

OLEA, The Olive.

The *Characters* are;

The Leaves are, for the moſt part, oblong and ever-green: the Flower conſiſts of one Leaf; the lower Part of which is hollow'd, but the upper Part is divided into four Parts: the Ovary, which is fix'd in the Centre of the Flower-cup, becomes an oval, ſoft, pulpy Fruit, abounding with a fat Liquor, incloſing an hard rough Stone.

The *Species* are;

1. OLEA *ſativa. C. B. P.* The manur'd Olive.

2. OLEA *Africana, folio longo lato, ſupra atro-viridi ſplendente, infra pallide viridi. Boerh. Ind.* African Olive, with a broad long Leaf, of a ſhining dark-green Colour on the Upper-ſide, but of a paler Green underneath.

3. OLEA *Africana, folio buxi craſſo atro viridi lucido, cortice albo ſcabro. Boerh. Ind.* The *African* box-leav'd Olive.

4. OLEA *minor Lucenſis, fructu odorato. Tourn.* The *Luca* Olive.

5. OLEA *fructu majori, carne craſſa. Tourn.* Olive with a large Fruit, having a thicker Pulp.

Theſe five Sorts are preſerv'd in the Gardens of the Curious, where they are planted either in Pots or Caſes, and remov'd into the Green-houſe in the Winters with Oranges, Myrtles, &c. but they are moſt of them hardy enough to endure the Cold of our ordinary Winters in the open Air, provided they are planted upon a dry Soil, and in a warm Situation; though in ſevere Winters they are often demoliſh'd, or at leaſt loſe their Heads, or are kill'd to the Surface; but this is what they are liable to in the South Parts of *France*, in which Country theſe Trees abound; and yet in very ſharp Winters are moſt of them deſtroy'd. There was a Parcel of theſe Trees growing in the Gardens of *Camden-houſe*, near *Kenſington*, a few Years ſince, which were ſeven or eight Feet high; and in ſome good Seaſons produced very good Fruit: theſe were planted againſt a South Wall; but were permitted to grow up rude without pruning, or faſtening to the Wall (which they do by no means care for); and during the time they were below the Top of the Wall, they throve very well; but after their Heads were gotten above the Wall, the North Winds did uſually greatly prejudice them every Winter; and I believe the hard Winter [1739.] did intirely demoliſh them.

Theſe Plants may be propagated by laying down their tender Branches (in the manner practis'd for other Trees), which ſhould remain undiſturb'd two Years; in which time they will have taken Root, and may then be taken off from the old Plants, and tranſplanted either into Pots fill'd with freſh light Earth, or into the open Ground in a warm Situation. The beſt Seaſon for tranſplanting them is the Beginning of *April*; when you ſhould, if poſſible, take the Opportunity of a moiſt Seaſon; and thoſe which are planted in Pots, ſhould be placed in a ſhady Part of the Green-houſe until they have taken Root; but thoſe planted in the Ground ſhould have Mulch laid about their Roots, to prevent the Earth from drying too faſt, and now-and-then refreſh'd with Water; but you muſt by no means let them have too much Moiſture, which will rot the tender Fibres of their Roots, and deſtroy the Trees. When the Plants have taken freſh Root, thoſe in the Pots may be expos'd to the open Air, with other hardy Exotics; with which they ſhould be hous'd in Winter, and treated as Myrtles, and other leſs tender Trees and Shrubs; but thoſe in the open Air will require no farther Care until the Winter following, when you ſhould mulch the Ground about their Roots, to prevent the Froſt from penetrating deep into it: and if it ſhould prove very ſevere, you ſhould cover them with Mats, which will defend them from being injur'd thereby; but you muſt be cautious not to let the Mats continue over them after the Froſt is paſt, leſt by keeping them too cloſe, their Leaves and tender Branches ſhould grow mouldy for want of free Air, which will be of as bad Conſequence to the Trees, as if they had been expos'd to the Froſt, and many times worſe; for it ſeldom happens, if they have taken much of this Mould, or have been long cover'd, ſo that it has enter'd the Bark, that they are ever recoverable again; whereas it often happens, that the Froſt only deſtroys the tender Shoots; but the Body, and larger Branches, remaining unhurt, put out again the ſucceeding Spring,

Theſe Trees are generally brought over from *Italy* every Spring, by the Perſons who bring over the Oranges, Jaſmines, *&c.* from whom they may be procur'd pretty reaſonable; which is a better Method than to raiſe them from Layers in this Country, that being too tedious; and thoſe which are thus brought over, have many times very large Stems, to which Size young Plants in this Country would not arrive in ten or twelve Years Growth. When you firſt procure theſe Stems, you ſhould (after having ſoak'd their Roots twenty-four Hours in Water, and clean'd them from the Filth they have contracted in their Paſſage) plant them in Pots fill'd with freſh light ſandy Earth, and plunge them into a moderate Hot-bed; obſerving to ſcreen them from the Violence of the Sun in the Heat of the Day, and alſo to refreſh them with Water, as you ſhall find the Earth in the Pots dry. In this Situation they will begin to ſhoot in a Month or ſix Weeks after; when you ſhould let them have Air in proportion to the Warmth of the Seaſon: and after they have made pretty good Shoots, you ſhould enure them to the open Air by degrees; into which they ſhould be removed, placing them in a Situation where they may be defended from ſtrong Winds: in this Place they ſhould remain till *October* following; when they muſt be removed into the Green-houſe, as was before directed. Having thus managed theſe Plants until they have acquir'd ſtrong Roots, and made tolerable good Heads, you may draw them out of the Pots, preſerving the Earth to their Roots, and plant them in the open Air in a warm Situation, where you muſt manage them as was before directed for the young ones; and theſe will in two or three Years produce Fruit, provided they do well. The *Luca* and Box-leav'd Olives are the hardieſt; for which Reaſon they ſhould be preferr'd to plant in the open Air; but the firſt Sort will grow to be the largeſt Trees.

OMPHALODES, *Venus* Navelwort.

The *Characters* are;

The Flower conſiſts of one Leaf, which expands in a circular Order, and is cut into ſeveral Segments: the Pointal, which riſes in the Middle of the Flower, becomes a Fruit, compos'd of four hollow umbilicated Capſules, ſomewhat reſembling a Baſket; in each of which is contained one almoſt flat Seed adhering to the Placenta, *which is pyramidal and four-cornered.*

The *Species* are;

1. Omphalodes *Luſitanica, lini folio. Tourn.* *Venus* Navelwort, *vulgo.*

2. Omphalodes *Luſitanica elatior, cynogloſſi folio. Tourn.* Taller *Portugal* Navelwort, with an Hound's-tongue-leaf.

3. Omphalodes *pumila verna, ſymphyti folio. Tourn.* Low vernal *Venus* Navelwort, with a Comfry-leaf, or Leſſer Borage.

The firſt of theſe Plants hath been a long time in the *Engliſh* Gardens. The Seeds of this Kind are ſold in the *London* Shops, as a Dwarf annual Flower, to be us'd for Edgings; for which Purpoſe it is by no means proper; for it often happens, that not a tenth Part of the Seeds grow, tho' they were ſaved with all poſſible Care; ſo that the Plants will be very thin, and in Patches; but, however, it is a pretty Ornament to the Borders of the Pleaſure-garden, if ſown in Patches, as hath been directed for the Dwarf Lychnis, and other annual Plants of the ſame Ground; amongſt which this Plant makes a pretty Variety. The Seeds of it ſhould be ſown in Autumn, ſoon after they are ripe; at which Seaſon they will come up very well; whereas thoſe ſown in the Spring ſeldom ſucceed: and the Plants will abide the Cold of our ordinary Winters, and will flower early the ſucceeding Spring, from which Plants you will have good Seeds in *July*; but thoſe ſown in the Spring very often fail of ripening Seeds.

The ſecond Sort is only in ſome curious Botanic Gardens at preſent, tho' it is equally as hardy as the firſt, and muſt be treated in the ſame manner. This grows taller, and hath broader Leaves, than the firſt, in which reſpects the only Difference between them conſiſts.

The third Sort is an abiding Plant, and multiplies very faſt by its trailing Branches, which take Root at their Joints as they lie upon the Ground, and may be taken off, and tranſplanted to make new Plants.

Theſe require a moiſt Soil, and a ſhady Situation, where they will thrive exceedingly, and produce great Quantities of pretty blue Flowers early in the Spring, for which it is chiefly valued.

ONAGRA, Tree-primroſe, *vulgo*.

The *Characters* are;

It hath a Roſe-flower, conſiſting generally of four Leaves, placed orbicularly, and reſting on the Empalement; out of whoſe Upper-part, which is fiſtulous, riſes the Pointal, the Under-part turning to a Fruit which is cylindrical, gaping in four Parts, and divided into four Cells, filled with Seeds, which are generally cornered, and adhere to the Placenta.

The *Species* are;

1. ONAGRA *latifolia. Inſt. R. H.* Broad-leav'd Tree-primroſe.

2. ONAGRA *latifolia, flore dilutiore. Inſt. R. H.* Broad-leav'd Tree-primroſe, with paler-yellow Flowers.

3. ONAGRA *latifolia, floribus amplis. Inſt. R. H.* Broad-leav'd Tree-primroſe, with ample Flowers.

4. ONAGRA *anguſtifolia. Inſt. R. H.* Narrow-leav'd Tree-primroſe.

5. ONAGRA *anguſtifolia, caule rubro, flore minori. Inſt. R. H.* Narrow-leav'd Tree-primroſe, with red Stalks, and a ſmaller Flower.

6. ONAGRA *Americana, folio betonicæ, fructu hiſpido. Plum. Cat. American* Tree-primroſe, with a Betony-leaf, and a prickly Fruit.

7. ONAGRA *laurifolia, flore amplo pentapetalo. Feuillée.* Bay-leav'd Tree-primroſe, with a large five-leav'd Flower.

8. ONAGRA *hyſſopifolia, flore amplo violaceo. Feuillée.* Hyſſop-leav'd Tree-primroſe, with a large violet-colour'd Flower.

9. ONAGRA *linariæ folio, magno flore purpureo. Feuillée.* Tree-primroſe with a Toad-flax-leaf, and a large purple Flower.

10. ONAGRA *ſalicis anguſto dentatoque folio, vulgo Mithon. Feuillée* Tree-primroſe with narrow indented Willow-leaves, commonly called Mithon.

The firſt Sort is very common in moſt *Engliſh* Gardens, where, when it has been ſuffered to ſcatter its Seeds, it will come up and flouriſh without any Care; and many times becomes a troubleſome Weed: this will thrive in the Smoke of *London*; ſo that it is a very proper Plant to adorn the City Gardens; for it continues in Flower from the Beginning of *June* until *Auguſt*; and ſometimes in cold Seaſons till near *Michaelmas*. The Flowers of this Plant do not open in the Middle of the Day, when the Weather is warm; but in the Evening, after the Sun is gone off, they open, and continue ſo until the Sun comes on them the next Day; in cloudy Weather the Flowers will continue open all Day, or when the Plants grow in the Shade. This Manner of the Flower opening in the Evening, has occaſioned the Name of Night-primroſe; by which ſome People call it. The four next-mentioned are equally hardy, and will grow in almoſt any Soil or Situation. The Seeds of theſe Plants may be ſown in *March*, in an open Situation; and when the Plants come up, they ſhould be kept clean from Weeds; and where they come up too cloſe, ſome of them ſhould be pulled up, to allow room for the others to grow. In this Place the Plants may remain till *Michaelmas*, when they ſhould be tranſplanted where they are to remain for Flowering. Theſe Plants produce a great Quantity of Seed, which, if permitted to ſcatter, will ſufficiently ſtock the Garden with Plants; but the old Plants rarely continue after they have ſeeded.

Tho' theſe Plants will bear tranſplanting pretty well, if it be done at *Michaelmas*; yet it is the better Way to ſow the Seeds, where the Plants are deſigned to remain for Flowering; becauſe they generally have a downright Root, which is often cut or broken by tranſplanting; and then the Plants never thrive ſo well, nor continue ſo long in Flower, as thoſe which remain undiſturbed.

The other ſix Sorts are more tender: theſe ſhould be raiſed on an Hot-bed, and managed as hath been directed for the *Amaranthus*: by which Method good Seeds may be obtained, and the Kinds preſerved.

The ſeventh Sort was found in the Plains of *Lima*, by Father *Feuillée*: this Sort was alſo found near *Panama* by Mr. *Robert Millar*, Surgeon, who ſent the Seeds to *England*. The eighth and eleventh Sorts were found by Father *Feuillée* in *Chily*: the tenth Sort he found by the River of *Plate*. This grows about a Foot high, and produces large purple Flowers. The eighth Sort grows taller, and produces large violet-colour'd Flowers, which renders them more valuable than the other Sorts.

ONIONS. *Vide* Cepa.

ONOBRYCHIS, Cock's-head, or Saint-foin.

The *Characters* are;

It hath a papilionaceous Flower, out of whoſe Empalement riſes the Pointal, which afterward becomes a creſted Pod, which is ſometimes rough, and full of Seeds, ſhaped like a Kidney: to which may be added, The Flowers grow in a thick Spike.

The *Species* are;

1. Onobrychis *foliis viciæ, fructu echinato, major, floribus dilute rubentibus. C. B. P.* Greater Cock's-head, with Vetch-leaves, rough Fruit, and pale-red Flowers.

2. Onobrychis *foliis viciæ, fructu echinato, major, floribus eleganter rubentibus. C. B. P.* Greater Cock's-head, with Vetch-leaves, rough Fruit, and beautiful red Flowers.

3. Onobrychis *fructu echinato, minor. C. B. P.* Smaller Cock's-head, with rough Fruit, or Medick-vetchling.

The two firſt are Varieties which only differ in the Colour of their Flowers, the ſame Seeds often producing both Sorts, tho' ſaved from one Plant. As there is alſo another Variety with a white Flower, which doth come from the ſame Seed, they may paſs for one Plant.

This is an abiding Plant, which, if ſown upon a dry, gravelly, or chalky Soil, will continue eighteen or twenty Years: but if it be ſown upon a deep, light, moiſt Soil, the Roots will run down into the Ground; and in the Winter-ſeaſon the Moiſture will rot them; ſo that the Plants ſeldom laſts above two Years in ſuch Places.

This is eſteemed one of the beſt Sorts of Fodder for moſt Cattle, and is a great Improvement to ſhallow chalky Hills, upon which it ſucceeds better than in any other Soil, and will continue many Years; and the Roots of this Plant, when plowed in, greatly enrich the Ground.

The beſt Seaſon for ſowing of this Seed is in the Beginning or Middle of *April*, according as the Seaſon is early or late, obſerving always to do it in dry Weather; otherwiſe the Seeds will be apt to burſt with Moiſture, and never come up. Theſe Seeds being large, there will require a great Quantity to ſow an Acre: the common Allowance for this Work is four Buſhels; but I would not adviſe above three at moſt: and if this Seed were ſown in Rows, in the manner directed for the *Medica*, it would be a great Improvement to the Plants; for when they have room enough, they are very ſubject to branch out on every Side, and become very ſtrong; ſo that when they are in Rows, that the Ground between them can be ſtirr'd with an Hoe-plough, it will cauſe them to ſhoot much ſtronger than when they grow ſo cloſe, that there can be no Culture beſtowed on them.

I have taken up Roots of this kind, where they have grown ſingly, and kept clear from Weeds, whoſe Shoots have ſpread near two Feet wide, and were much ſtronger than thoſe which grew nearer together upon the ſame Soil.

There are ſome Perſons who recommend the ſowing Oats or Barley with this Seed: but that is a very bad Method; for what is gain'd from the Crop of Corn, will be doubly loſt in the Saint-foin: and this generally holds true in moſt Sorts of Graſs-ſeeds; for the Corn, growing over it, doth ſo weaken the Crop beneath, that it ſcarcely recovers its Strength in two Years time after.

The Ground in which this Seed is ſown, ſhould be well plowed, and made very fine: and if you ſow it in Rows, the Drills ſhould be made eighteen Inches aſunder, and about an Inch deep; in which the Seeds ſhould be ſown indifferently thick; for if the Plants come up too cloſe, it will be very eaſy to hoe them out, ſo as to leave the remaining ones ſix or eight Inches aſunder; for the Ground ſhould be hoed, after the Plants are come up, to deſtroy the Weeds; which, if ſuffered to grow, would ſoon over bear the young Plants, and deſtroy them; but when they have obtained Strength, they will prevent the Weeds from growing up amongſt them.

The firſt Year after ſowing, you ſhould by no means feed it down; for the Crown of the Roots being then young and tender, the Cattle would eat it ſo low, as intirely to deſtroy the Roots; and if large Cattle were let in upon it, they would trample it down ſo much as to prevent its ſhooting again: therefore the firſt Year it ſhould be mowed, which ſhould be done when it is in Flower, being careful to turn it often, that it may the ſooner dry, and be removed; for while it continues upon the Ground, it greatly retards the Roots from ſhooting again.

The time when this Crop will be fit to cut the firſt Year, is toward the Latter-end of *July*, or the Beginning of *Auguſt*. After this is clear'd off, the Roots will ſoon ſhoot again; and by the End of *September*, provided the Seaſon be favourable, there will be a fine Crop fit for feeding: at which time, or ſoon after, you may turn in Sheep, which will, in eating down the Graſs, enrich the Ground with their Dung, whereby the Roots will be greatly ſtrengthened; but you ſhould not ſuffer them to remain too long upon it, leſt, as I before obſerved, they ſhould eat it down too low, which would deſtroy the Roots; nor ſhould they ever be ſuffered to remain upon it longer than the middle of *March*; after which time it ſhould be let grow for a Crop, which will be fit to cut the Latter-end of *May*; and if you do not feed it, there will be a ſecond Crop by the End of *July* following; ſo that you may have two Crops every Year, beſides the Advantage of feeding it down in Winter and Spring: and if you obſerve to ſtir the Ground betwixt the Rows after every Cutting, as was directed for the *Medica*, it will be of great Service to the Roots, and occaſion the Shoots to be much ſtronger than if wholly neglected, as is the common Practice.

This Sort of Hay is excellently good for Horſes, and is eſteemed one of the beſt Sorts of Food for moſt Cattle, eſpecially in the Spring, there being no Danger attending it, as there is in Clover, and ſome other Sorts of Fodder: it breeds abundance of Milk; and the Butter that is made of it is very good.

And altho' it is common in many Parts of *England*, yet a few Plants of the deep red flower'd Sort, when diſpoſed in large Borders of the Pleaſure-garden, afford an agreeable Variety: the Flowers, which are of a beautiful red Colour, being collected into a long Spike, and continuing a long time in Beauty, make a very pretty Mixture amongſt other Flowers in the Borders of large Gardens, where there is room; and the Roots will abide ſeveral Years without renewing, requiring very little Culture, being extreme hardy, in reſpect to Heat or Cold, provided they are planted upon a dry Soil.

The third Sort is annual; nor are the Flowers ſo beautiful as thoſe of the former Sort, for which Reaſon it is ſeldom cultivated, except in Botanic Gardens, for Variety. This may be ſown in the Beginning of *April*, upon a freſh light Soil, where the Plants will come up in *May*; and will require no farther Care but to clear them from Weeds: the Seeds will ripen in *Auguſt*, when they ſhould be gathered, and preſerved for ſowing the ſucceeding Spring.

OPHIOGLOSSUM, Adders-tongue.

The *Characters* are;

It hath no viſible Flower; but the Seeds are produced on a Spike, which reſemble a Serpent's Tongue: which Seed is contained in many longitudinal Cells, which open, and caſt forth the Seeds when ripe.

The *Species* are;

1. OPHIOGLOSSUM *vulgatum*. *C. B. P.* The common Adders-tongue.

2. OPHIOGLOSSUM *anguloſo folio*. *C. B. P.* Adders-tongue with an angular Leaf.

3. OPHIOGLOSSUM *minus, ſubrotundo folio*. *C. B. P.* Leſſer Adders-tongue, with a roundiſh Leaf.

4. OPHIOGLOSSUM *bilingue majus, folio acuto*. *Mentz. Pug.* Greater Adders-tongue, with a pointed Leaf, and a double Tongue.

5. OPHIOGLOSSUM *bilingue medium, folio obtuſo*. *Mentz. Pug.* Middle Adders-tongue, with a blunt Leaf, and a double Tongue.

6. OPHIOGLOSSUM *bilingue minimum*. *Mentz. Pug.* The leaſt Adders-tongue, with a double Spike or Tongue.

7. OPHIOGLOSSUM *palmatum*. *Plum.* Handed Adders-tongue.

8. OPHIOGLOSSUM *cordiforme & reticulatum*. *Plum.* Heart-ſhaped and netted Adders-tongue.

The firſt Sort grows wild in moiſt Meadows in ſeveral Parts of *England*. This is directed to be uſed in Medicine, by the College of Phyſicians, in their Diſpenſatory; but is ſeldom to be found in Gardens, being very difficult to tranſplant; and will not live long where the Graſs doth not grow about it. The beſt Method to have it ſucceed is, to dig up the Plants about the Beginning of *April*, with large Balls of Earth to them, being careful to dig ſo deep as to get below their Roots; then plant theſe with the Turf about them, in a moiſt ſhady Place, where they will grow pretty well, and may continue for ſome Years.

The ſecond and third Sorts grow

wild in *Germany*, and on the *Alps*; but are not to be found in *England*.

The fourth, fifth, and ſixth Sorts are alſo Varieties which have been found in ſome Parts of *Europe*; but it is not certain whether they are diſtinct Species, or only Variations from the common Sort.

Theſe are all as hardy as the common Sort; therefore, whenever they are found, may be tranſplanted, and treated in the ſame manner.

The ſeventh and eighth Sorts were diſcovered by Father *Plumier* in *America*. Theſe grow in moiſt ſwampy Places in *Jamaica*, and ſeveral other Places in the warmer Parts of *America*; but are difficult to remove ſo as to have them grow in other Countries.

OPHRIS, Tway-blade.

The *Characters* are;

It hath a polypetalous anomalous Flower, conſiſting of ſix diſſimilar Leaves; of which the five upper ones are ſo diſpoſed, as to repreſent, in ſome meaſure, an Helmet; the under one being beaded, and ſhaped like a Man: the Empalement becomes a Fruit, perforated with three Windows; to which adhere Valves, pregnant with very ſmall Seeds like Duſt.

The *Species* are;

1. Ophris *bifolia. C. B. P.* Common Tway-blade.

2. Ophris *bifolia bulboſa. C. B. P.* Bulbous-rooted Tway-blade.

3. Ophris *paluſtris, radice repente. Inſt. R. H.* Marſh Tway-blade, with a creeping Root.

4. Ophris *minima. C. B. P.* The leaſt Tway-blade.

The firſt Sort is pretty common in moiſt Meadows, and in ſhady moiſt Woods, in divers Parts of *England*: it flowers the Latter end of *May*, and in the Beginning of *June*. This Plant may be tranſplanted into Gardens, if the Roots are taken up with a Ball of Earth, ſoon after the Leaves decay. Theſe muſt be planted in a moiſt ſhady Border, where, if they are not diſturbed, they will remain many Years, and require no other Care but to keep them clear from Weeds.

The ſecond Sort doth not grow wild in *England*; but is frequently found in *Germany*, and on the *Alps*: this may be tranſplanted and managed as the former Sort.

The third Sort grows plentifully in ſeveral of the Northern Counties of *England*; and the fourth Sort grows in *Cambridgeſhire*, in *Hertfordſhire*, and *Kent*. Theſe two Sorts delight in cold moiſt Places; but are with great Difficulty preſerved in Gardens.

OPULUS, The Gelder Roſe.

The *Characters* are;

The Leaves are like thoſe of the Maple-tree: the Flowers conſiſt of one Leaf, which expands in a circular Roſe-form, and is divided at the Top into five Parts: theſe are collected, for the moſt part, in form of an Umbel; the largeſt of which grow on the Outſide, and are barren: but thoſe in the Middle are fruitful, producing red Berries; in each of which is contained one flat heart-ſhaped Seed.

The *Species* are;

1. Opulus *Ruelli.* Marſh Elder, or Gelder Roſe, with flat Flowers.

2. Opulus *flore globoſo. Tourn.* The Gelder, or Gelderland Roſe.

3. Opulus *flore globoſo, folio variegato.* The Gelder Roſe, with ſtriped Leaves.

The firſt of theſe Plants is very common in moiſt Woods in divers Parts of *England*; but is ſeldom cultivated in Gardens; tho' if the Soil be moiſt, in which this Tree is planted, it will afford a very agreeable Proſpect, both in the Seaſon when it is in Flower, and alſo in the

Autumn, when the Fruit is ripe, which generally grows in large Cluſters, and is of a beautiful red Colour; ſo that where a Wilderneſs or other Plantation of flowering Trees is deſigned, and the Ground is moiſt, this and the next are two of the moſt proper Trees for ſuch Purpoſes; theſe thriving much better, and will produce their Flowers larger, and in greater Quantities, than when they are placed in a dry Situation.

The ſecond Sort is very common in old Gardens in moſt Parts of *England:* this produces only barren Flowers, which, being all very large, are produced in a globular Form; ſo that, at a Diſtance, they reſemble a Snow-ball; whence the People in ſome Countries give it the Name of Snow-ball-tree. This Difference was at firſt accidental, as is the Caſe of all double Flowers, which commonly ariſe from Seeds: and tho' theſe are not productive of Fruit, yet, for the ſake of their Flowers, they are much more eſteemed than the ſingle Sort by the Gardeners.

The ſtriped Sort is alſo an Accident, occaſioned by an Obſtruction of the Juices, as is the Caſe of all variegated Plants. This is preſerved as a Curioſity by ſuch as are Lovers of ſtriped Trees and Plants; but muſt not be planted in a rich Soil, which would cauſe them to grow vigorouſly, whereby they would be in Danger of becoming plain again.

All theſe Sorts may be propagated either from Suckers, or by laying down their Branches, which will take Root in a Year's time; when they may be taken off from the old Plants, and tranſplanted either into a Nurſery, where they may be trained up for two or three Years, or plac'd where they may remain for good. The beſt time to remove theſe Trees is at *Michaelmas*, as ſoon as their Leaves begin to decay, that they may be well rooted before the Drought of the next Spring comes on, which is often deſtructive to ſuch as have been newly tranſplanted, if they are not carefully attended with Water.

They are extreme hardy; and will endure the ſevereſt Cold of our moſt Northern Situations, and are only impatient of great Heat and Drought; ſo that they are very proper to plant in very cold Soils, and Places which are greatly expos'd to the North Winds, where few other Shrubs will thrive ſo well. They will grow to the Height of twelve or fourteen Feet, and, if reduced to regular Heads, are very ornamental during the Seaſon of Flowering: and their Flowers are very proper to intermix with Peonies, and other large Flowers, for Baſons and Flower-pots to adorn Halls and Chimneys. Their Seaſon of Flowering is in *May*, tho' their Flowers ſometimes continue in Beauty a great Part of *June*, eſpecially if the Weather prove cool and moiſt.

OPUNTIA, The *Indian* Fig.

The *Characters* are;

The Flower conſiſts of many Leaves, which expand in form of a Roſe, having a great Number of Stamina *in the Centre, which grow upon the Top of the Ovary; the Ovary afterward becomes a fleſhy umbilicated Fruit, with a ſoft Pulp, incloſing many Seeds; which are, for the moſt part, angular.*

The *Species* are;

1. OPUNTIA *vulgo herbariorum. J. B.* The common *Indian* Fig of the Botaniſts.

2 OPUNTIA *minima, folio ſubrotundo. Tourn.* Leaſt *Indian* Fig, with roundiſh Leaves.

3. OPUNTIA *folio oblongo, media. Tourn.* Middle *Indian* Fig, with an

oblong Leaf, commonly called the Cochineal Fig-tree.

4. OPUNTIA *folio minori, rotundiori, & compreſſiori. Tourn.* *Indian* Fig, with a ſmaller, rounder, and flatter Leaf.

5. OPUNTIA *major, validiſſimis ſpinis munita. Tourn.* The greater *Indian* Fig, armed with very ſtrong Prickles.

6. OPUNTIA *maxima, folio ſpinoſo, latiſſimo & longiſſimo. Tourn.* The largeſt *Indian* Fig, with a very broad and long prickly Leaf.

7. OPUNTIA *folio ſpinoſo, longiſſimo, & anguſto. Tourn.* *Indian* Fig, with a very long narrow prickly Leaf.

8. OPUNTIA *latifolia, craſſiori folio, ſpinis albis numeroſis armato. Boerh. Ind.* *Indian* Fig, with a broad thick Leaf armed with many white Spines.

9. OPUNTIA *Curaſſavica minima. H. Beaum.* The ſmalleſt *Indian* Fig from *Curacoa*, commonly called the Pin-pillow.

10. OPUNTIA *Americana, arbor excelſa, foliis reticulatis, flore flaveſcente. Plum.* *American Indian* Fig, which grows to be a tall Tree, with netted Leaves, and a yellowiſh Flower.

11. OPUNTIA *folio plano glabro ſcolopendriæ. Boerh. Ind.* *Indian* Fig, with a plain ſmooth Leaf, like Spleenwort.

12. OPUNTIA *maxima, folio oblongo rotundo majore, ſpinulis obtuſis mollibus & innocentibus obſito, flore ſtriis rubris variegato. Sloan. Cat.* The greateſt *Indian* Fig, with greater oblong roundiſh Leaves, and ſmall ſoft blunt Spines, with a Flower ſtriped with Red.

13. OPUNTIA *major ſpinoſa cauleſcens, flore minore rubro clauſo, fructu parvo coccineo. Houſt.* Greater ſtalky and prickly *Indian* Fig, with a ſmaller red Flower, which doth not expand, and a ſmall ſcarlet Fruit.

14. OPUNTIA *caulescens, foliis ampliſſimis tenuibus compreſſis, ſpinis longiſſimis, confertiſſimis, gracilibus, & albicantibus armatis. Houſt.* Stalky *Indian* Fig, with large narrow compreſſed Leaves, which are cloſely armed with very long ſlender white Spines.

The firſt of theſe Plants hath been a long time in *England*, and is the moſt common Sort in *Europe*: this Mr. *Ray*, and Dr. *Robinſon*, obſerved growing wild in the Kingdom of *Naples*, by the Sides of the Highways, on the Sides of the Mountains, and among Rocks in great abundance; but in theſe Northern Parts of *Europe* it is generally preſerved in the Green houſes, with other Exotic Plants; tho' I have planted it under a warm Wall in a very dry Soil, where it has continued for ſeveral Years, and endured the ſevereſt of our Cold without any Cover; and has produced a greater Quantity of Flowers and Fruit than thoſe which were houſed: ſo that the Cold is not ſo great an Enemy to this Plant as Wet, which, if ſuffered to lie long upon it, or given in too large Quantities to the Root, will deſtroy it in a ſhort time.

The other Sorts are much tenderer, being all of them Natives of the warm Parts of the *Weſt-Indies*. Theſe are ſome of them ſo tender as not to be preſerved without the Aſſiſtance of a Stove, eſpecially the ninth, tenth, eleventh, twelfth, thirteenth, and fourteenth Sorts, in any tolerable Degree of Health; for if they have not ſome additional Warmth to the Air of the Houſe in Winter, their Stems will ſhrivel, and look yellowiſh and withered.

The thirteenth Sort grows to be very large, having thick woody

Stems: this grows plentifully on the Hills, and by the Sides of the Roads, in the Iſland of *Jamaica*.

The fourteenth Sort was obſerved in great Plenty near the Head of *Kingſton* Harbour in *Jamaica*, by the late Dr. *Houſtoun*; but he never could ſee either Fruit or Flower on the Plants. This is by ſome Perſons called *Robinſon Cruſo's Coat*; but for what Reaſon I cannot imagine.

Theſe Plants may all be propagated by cutting off their Branches at the Joints, during any of the Summer-months; which ſhould be laid in a warm dry Place for a Fortnight, that the wounded Part may be healed over, otherwiſe they will rot with the Moiſture which they imbibe at that Part; as is the Caſe with moſt other ſucculent Plants. The Soil in which theſe Plants muſt be planted, ſhould be compoſed after the following manner; *viz.* One-third of freſh light Earth from a Paſture; a third Part Sea-ſand; and the other Part ſhould be one half rotten Tan, and the other half Lime-rubbiſh: theſe ſhould be well mixed, and laid in an Heap three or four Months before it be uſed, obſerving to turn it over at leaſt once a Month, that the ſeveral Parts may be well united: then you ſhould paſs it thro' a rough Screen, in order to ſeparate the largeſt Stones and Clods; but by no means ſift it too fine, which is a very common Fault: then you ſhould reſerve ſome of the ſmaller Stones and Rubbiſh to lay at the Bottom of the Pots, in order to keep an open Paſſage for the Moiſture to drain off; which is what muſt be obſerved for all ſucculent Plants; for if the Moiſture be detained in the Pots, it will rot their Roots, and deſtroy the Plants.

When you plant any of the Branches of theſe Plants, you ſhould plunge the Pots into a moderate Hot-bed, which will greatly facilitate their taking Root: you ſhould alſo refreſh them now-and-then with a little Water; but be very careful not to let them have too much, or be too often watered, eſpecially before they are rooted. When the Plants begin to ſhoot, you muſt give them a large Share of Air, by raiſing the Glaſſes, otherwiſe their Shoots will draw up ſo weak, as not to be able to ſupport themſelves; and after they have taken ſtrong Root, you ſhould enure them to the Air by degrees, and then remove them into the Stove where they ſhould remain, placing them near the Glaſſes, which ſhould always be opened in warm Weather: ſo that they may have the Advantage of a free Air, and yet be protected from Wet and Cold.

During the Summer-ſeaſon theſe Plants will require to be often refreſhed with Water; but it muſt not be given to them in large Quantities, leſt it rot them; and in Winter this ſhould be proportion'd to the Warmth of the Stove; for if the Air be kept very warm, they will require to be often refreſhed, otherwiſe their Branches will ſhrink; but if the Houſe be kept in a moderate Degree of Warmth, they ſhould have very little; for Moiſture at that Seaſon will rot them very ſoon.

The Heat in which theſe Plants thrive beſt, is the temperate Point, as mark'd on Botanical Thermometers; for if they are kept too warm in Winter, it cauſes their Shoots to be very tender, and thereby very liable to Decay, if not duly attended. Thoſe Sorts which are inclinable to grow upright, ſhould have their Branches ſupported with Stakes; otherwiſe their Weight is ſo great, that it will break them down.

Theſe Plants are by moſt People

expoſed to the open Air in the Summer-ſeaſon; but they thrive much better, if they are continued in the Stoves, provided the Glaſſes be kept open, ſo that they may have free Air; for when they are ſet abroad, the great Rains which generally fall in Summer, together with the unſettled Temper of the Air in our Climate, does greatly diminiſh their Beauty, by retarding their Growth; and ſometimes in wet Summers they are ſo replete with Moiſture as to rot in the ſucceeding Winter; nor will thoſe Plants which are ſet abroad (I mean the tender Sorts) produce their Flowers and Fruit in ſuch Plenty as thoſe which are conſtantly preſerved in the Houſe.

The twelfth Sort is ſuppoſed to be the Plant upon which the Cochineal-fly breeds: theſe depoſit their Eggs in the Centre of the Flowers, upon the Crown of the Ovary; and when they are hatch'd, the young Inſects feed upon the Fruit, which is of a deep-red Colour within; and if eaten by Men, colours their Urine as red as Blood; which has often frightened Strangers who have eaten of the Fruit, when they have thought it was real Blood they voided; tho' no ill Effects attend it.

The ninth and eleventh Sorts are leſs common than the others, and are rarely ſeen but in very curious Gardens: theſe are the tendereſt of them all, and ſhould be placed in a warm Part of the Stove in Winter; but muſt have very little Water given them at that Seaſon; and in Summer muſt always be kept in the Houſe: for they will not bear the open Air in the Heat of Summer, which is ſeldom very regular in this Country.

ORANGE. *Vide* Aurantium.

ORCHARD. In planting of an Orchard, great Care ſhould be had of the Nature of the Soil, that ſuch Sorts of Fruit as are adapted to grow upon the Ground intended to be planted, may be choſen, otherwiſe there can be little Hopes of their ſucceeding; and it is for want of rightly obſerving this Method, that we ſee in many Countries Orchards planted which never arrive to any tolerable Degree of Perfection, their Trees ſtarving; and their Bodies are either covered with Moſs, or the Bark cracks and divides; both which are evident Signs of the Weakneſs of the Trees; whereas, if inſtead of Apples the Orchard had been planted with Pears, Cherries, or any other Sort of Fruit to which the Soil had been adapted, the Trees might have grown very well, and produced great Quantities of Fruit.

As to the Poſition of the Orchard (if you are at full Liberty to chooſe), a riſing Ground, open to the South-eaſt, is to be preferr'd: but I would by no means adviſe to plant upon the Side of an Hill, where the Declivity is very great; for in ſuch Places the great Rains commonly waſh down the better Part of the Ground, whereby the Trees would be deprived of proper Nouriſhment: but where the Riſe is gentle, it is of great Advantage to the Trees by admitting the Sun and Air between them better than it can upon an intire Level; which is an exceeding Benefit to the Fruit, by diſſipating Fogs, and drying up the Damps, which, when detained amongſt the Trees, mix with the Air, and render it rancid: if it be defended from the Weſt, North, and Eaſt Winds, it will alſo render the Situation ſtill more advantageous; for it is chiefly from thoſe Quarters that Fruit-trees receive the greateſt Injury: therefore, if the Place be not naturally defended from theſe by riſing Hills (which is always to be preferr'd, then you ſhould plant large-growing Timber-trees at ſome Diſtance from the Orchard, to anſwer this Purpoſe.

You ſhould alſo have a great regard to the Diſtance of planting the Trees, which is what few People have rightly conſider'd; for if you plant them too cloſe, they will be liable to Blights; and the Air being hereby pent in amongſt them, will cauſe the Fruit to be ill-taſted, having a great Quantity of damp Vapours from the Perſpiration of the Trees, and the Exhalations from the Earth, mix'd with it, which will be imbibed by the Fruit, and renders their Juices crude and unwholſome.

Wherefore I can't but recommend the Method which has been lately practiſed by ſome particular Gentlemen with very good Succeſs; and that is, to plant the Trees fourſcore Feet aſunder, but not in regular Rows. The Ground between the Trees they plow and ſow with Wheat, and other Crops, in the ſame manner as if it were clear from Trees; and they obſerve their Crops to be full as good as thoſe quite expoſed, except juſt under each Tree, when they are grown large, and afford a great Shade; and by thus plowing and tilling the Ground, the Trees are rendered more vigorous and healthy, ſcarcely ever having any Moſs, or other Marks of Poverty, and will abide much longer, and produce better Fruit.

If the Ground in which you intend to plant an Orchard has been Paſture for ſome Years, then you ſhould plow in the Green-ſward the Spring before you plant the Trees: and if you will permit it to lie a Summer fallow, it will greatly mend it, provided you ſtir it two or three times, to rot the Sward of Graſs, and prevent Weeds growing thereon.

At *Michaelmas* you ſhould plow it pretty deep, in order to make it looſe for the Roots of the Trees, which ſhould be planted thereon in *October*, provided the Soil be dry; but if it be moiſt, the Beginning of *March* will be a better Seaſon.

When you have finiſhed planting the Trees, you ſhould provide ſome Stakes to ſupport them, otherwiſe the Wind will blow them out of the Ground; which will do them much Injury, eſpecially after they have been planted ſome time; for the Ground at that Seaſon being warm, and for the moſt part moiſt, the Trees will very ſoon puſh out a great Number of young Fibres; which, if broken off by their being diſplaced, will greatly retard the Growth of them.

In the Spring following, if the Seaſon ſhould prove dry, you ſhould cut a Quantity of green Turf, which muſt be laid upon the Surface of the Ground about their Roots, turning the Graſs downward; which will prevent the Sun and Wind from drying the Ground, whereby a great Expence of Watering will be ſaved: and after the firſt Year they will be out of Danger, provided they have taken well.

Whenever you plow the Ground betwixt theſe Trees, you muſt be careful not to go too deep amongſt their Roots, leſt you ſhould cut them off, which would greatly damage the Trees: but if you do it cautiouſly, the ſtirring of the Surface of the Ground will be of great Benefit to them; tho' you ſhould obſerve never to ſow too near the Trees, nor ſuffer any great-rooting Weeds to grow about them, which would exhauſt the Goodneſs of the Soil, and ſtarve them.

The Soil of your Orchard ſhould alſo be mended once in two or three

Years with Dung, or other Manure, which will alſo be abſolutely neceſſary for the Crops ſown between: ſo that where Perſons are not inclinable to help their Orchards, where the Expence of Manure is pretty great; yet, as there is a Crop expected from the Ground beſides the Fruit, they will the more readily be at the Charge upon that Account.

In making choice of Trees for an Orchard, you ſhould always obſerve to procure them from a Soil nearly akin to that where they are to be planted, or rather poorer; for if you have them from a very rich Soil, and that wherein you plant them is but indifferent, they will not thrive well, eſpecially for four or five Years after planting: ſo that 'tis a very wrong Practice to make the Nurſery, where young Trees are raiſed, very rich, when the Trees are deſigned for a middling or poor Soil. The Trees ſhould alſo be young and thriving; for whatever ſome Perſons may adviſe to the contrary, yet it has always been obſerv'd, that tho' large Trees may grow, and produce Fruit, after being remov'd, they never make ſo good Trees, nor are ſo long-liv'd, as thoſe which are planted while young.

Theſe Trees, after they are planted out, will require no other Pruneing but only to cut out dead Branches, or ſuch as croſs each other, ſo as to render their Heads confus'd and unſightly: the too often pruning them, or ſhortening their Branches, is very injurious; eſpecially to Cherries and Stone-fruit, which will gum prodigiouſly, and decay in ſuch Places where they are cut: and the Apples and Pears, which are not of ſo nice a Nature, will produce a greater Quantity of lateral Branches, which will fill the Heads of the Trees with weak Shoots whenever their Branches are thus ſhorten'd; and many times the Fruit is hereby cut off, which, on many Sorts of Fruit-trees, is firſt produc'd at the Extremity of their Shoots.

ORCHIS, Satyrion, or Fool-ſtones.

The *Characters* are;

It hath an anomalous Flower, conſiſting of ſix diſſimilar Leaves, the five uppermoſt of which are ſo diſpos'd as to imitate in ſome manner an Helmet; the under one being of many Shapes, headed for the moſt part, and tail'd, ſometimes repreſenting a naked Man, ſometimes a Butterfly, a Drone, a Pigeon, an Ape, a Lizard, a Parrot, a Fly, and other Things: but the Empalement afterward becomes a Fruit divided into three Cells, in which are contained many ſmall Seeds: to theſe Notes ſhould be added, The Flowers are collected into a Spike; and the Roots are fleſhy, ſometimes roundiſh and double like Teſticles, ſometimes flat, and in a manner ſhap'd like an Hand.

The *Species* are;

1. ORCHIS *morio mas, foliis maculatis.* *C. B. P.* The Male Fool-ſtones.

2. ORCHIS *morio fœmina.* *Park. Theat.* The Female Fool-ſtones.

3. ORCHIS *barbata fœtida.* *J. B.* The Lizard-flower, or Great Goat-ſtones.

4. ORCHIS *Pannonica.* 4. *Cluſ. Hiſt.* Little purple-flowered Orchis.

5. ORCHIS *obſcure purpurea odorata.* *Tourn.* Sweet-ſmelling dark-purple Orchis.

6. ORCHIS *purpurea, ſpica congeſta pyramidali.* *Raii Syn.* Purple late-flowering Orchis.

7. ORCHIS *odorata moſchata, ſive Monorchis.* *C. B. P.* The yellow-ſweet or Muſk Orchis.

8. Orchis *ſpiralis alba odorata. J. B.* Triple Ladies Traces.

9. Orchis *latifolia, hiante cucullo, major. Tourn.* The Man Orchis.

10. Orchis *anthropophora Oreades. Col. Ec.* Man Orchis, with a ferrugineous, and ſometimes a green Colour.

11. Orchis *myodes, galea & alis herbidis. J. B.* The common Fly Orchis.

12. Orchis *myodes major. Park. Theat.* The greater Fly Orchis.

13. Orchis *fuſciflora, galea & alis purpuraſcentibus. J. B.* The common Humble-bee Satyrion, or Bee flower.

14. Orchis *ſive Teſticulus Sphegodes, hirſuto flore. J. B.* Humble-bee Satyrion, with green Wings.

15. Orchis *hermaphroditica bifolia. J. B.* Butterfly Satyrion.

16. Orchis *alba bifolia minor, calcari oblongo. C. B. P.* The leſſer Butterfly Satyrion.

17. Orchis *palmata pratenſis latifolia, longis calcaribus. C. B. P.* The Male handed Orchis, or Male Satyrion Royal.

18. Orchis *palmata pratenſis maculata. C. B. P.* The Female handed Orchis, or Female Satyrion Royal.

19. Orchis *palmata minor, calcaribus oblongis. C. B. P.* Red-handed Orchis, with long Spurs.

20. Orchis *palmata minor, flore luteo viridi. Raii Syn.* Handed Orchis, with a greeniſh Flower, by ſome call'd the Frog Orchis.

All theſe Sorts of Orchis grow wild in ſeveral Parts of *England*; but, for the extreme Oddneſs and Beauty of their Flowers, deſerve a Place in every good Garden: and the Reaſon for their not being cultivated in Gardens proceeds from their Difficulty to be tranſplanted: tho' this, I believe, may be eaſily overcome, where a Perſon has an Opportunity of marking their Roots in their time of Flowering, and letting them remain until their Leaves are decay'd, when they may be tranſplanted with Safety: for it is the ſame with moſt Sorts of bulbous or fleſhy-rooted Plants, which, if tranſplanted before their Leaves decay, ſeldom live, notwithſtanding you preſerve a large Ball of Earth about them: for the extreme Parts of their Fibres extend to a great Depth in the Ground, from whence they receive their Nouriſhment; which if broken or damag'd by taking up their Roots, they ſeldom thrive after; for tho' they may ſometimes remain alive a Year or two, yet they grow weaker, until they quite decay; which is alſo the Caſe with Tulips, Fritillaria's, and other bulbous Roots, when removed, after they have made Shoots: ſo that whoever would cultivate them, ſhould ſearch them out in their Seaſon of Flowering, and mark them; and, when their Leaves are decay'd, the Roots ſhould be taken up, and planted in a Soil and Situation as nearly reſembling that wherein they naturally grow, as poſſible, otherwiſe they will not thrive: ſo that they cannot be placed all in the ſame Bed; for ſome are only found upon chalky Hills, others in moiſt Meadows, and ſome in ſhady Woods, or under Trees: but if their Soil and Situation be adapted to their various Sorts, they will thrive, and continue ſeveral Years, and, during their Seaſon of Flowering, will afford as great Varieties as any Flowers which are at preſent cultivated.

The firſt Sort flowers in *April*, and is very common in Paſtures, and buſhy Places, in moſt Parts of *England*.

The ſecond Sort flowers in *May:* this is common in Paſtures almoſt every-where.

The third Sort is more rare than the former: this is found in a Lane near *Dartford* in *Kent*, and is one of the largeſt of all the Kinds: it flowers at the Latter-end of *May*.

The fourth Sort grows upon dry barren Hills, particularly between *Northfleet* and *Graveſend:* this flowers at the Latter-end of *April*.

The fifth Sort is found in great Plenty in *Weſtmorland*; but particularly in the Meadows, upon both the Banks of *Eden*, throughout ſeveral Pariſhes: it flowers in *May*.

The ſixth Sort grows upon dry, barren, or chalky Hills in divers Parts of *England:* this flowers in *June*.

The ſeventh Sort grows upon chalky Hills,, but is very rare; it is particularly found upon the Hills near *Cawſham* in *Berkſhire*, and upon *Gogmagog* Hills in *Cambridgeſhire:* it flowers in *May*.

The eighth Sort flowers in *Auguſt:* this grows upon dry ſtony Places, as alſo in moiſt Paſtures in the North Parts of *England*.

The ninth Sort grows upon *Cawſham* Hills, as alſo upon the dry Banks on the Road-ſide between *Greenhith* and *Northfleet* in *Kent*; and flowers in *May*.

The tenth Sort is found about *Northfleet* with the former; and flowers about the ſame time; as do alſo the eleventh and twelfth.

The thirteenth Sort flowers in *June:* this grows upon dry Places in many Parts of *England*, as doth the fourteenth Sort, which flowers in *April*.

The fifteenth and ſixteenth Sorts grow in ſhady Places in divers Parts of *England:* they both flower in *May*.

The ſeventeenth and eighteenth Sorts grow in moiſt Places very plentifully; the firſt flowering in *May*, the other in *June*.

The nineteenth Sort grows in moiſt Paſtures; and flowers in *June*.

The twentieth Sort grows in dry Paſtures; and flowers in *May*.

Thus having mentioned the ſeveral Places of Growth, and the Times of theſe Plants Flowering, it will be no very difficult Taſk for a Perſon to ſearch them out; which if it happens to be in a Place where the Roots may be marked, and taken up after their Leaves are decayed (as I ſaid before), there will be little Hazard of their ſucceeding: but if you are oblig'd to take them up in Flower, you muſt be very careful to preſerve as much Earth as poſſible to their Roots, otherwiſe there can be little Hopes of their living. Nor ſhould they be kept out of the Ground longer than till you can conveniently get them home; for if the Air dries the Earth about them, they will ſhrink, and be good for nothing; and if the Earth be watered, the Roots of ſuch as grow upon dry Soils will rot and periſh; therefore you ſhould be very careful in this Particular.

OREOSELINUM, Mountain Parſley.

The *Characters* are;

It hath a roſe-ſhaped umbellated Flower, conſiſting of ſeveral Leaves, placed in a circular Order, reſting on the Empalement, which afterward becomes a Fruit compoſed of two Seeds, which are oval, plain, large-ſtreak'd, and bordered, and ſometimes caſt off their Cover: to theſe Notes muſt be added, That the Leaves are like Parſley.

The *Species* are;

1. Oreoselinum *apii folio, majus. Inſt. R. H.* Greater Moun-

tain Parſley, with a Parſley-leaf.

2. Oreoselinum *apii folio, minus. Inſt. R. H.* Smaller Mountain Parſley, with a Parſley-leaf.

3. Oreoselinum *pratenſe, cicutæ folio. Inſt. R. H.* Meadow Mountain Parſley, with an Hemlock-leaf.

4. Oreoselinum *Orientale, ſeſelios Maſſilienſis folio. Tourn. Cor. Eaſtern* Mountain Parſley, with a Leaf like the Hartwort of *Marſeilles.*

The firſt and ſecond Sorts grow in the mountainous Paſtures and Vineyards on the *Rhine* in *Germany*; as alſo on the Hills in the Neighbourhood of *Geneva.*

The third Sort grows in the Meadows, and low Paſtures, in ſeveral Parts of *Germany*; but particularly in the *Palatinate.*

The fourth Sort was diſcovered by Dr. *Tournefort* in the *Levant*, from whence he ſent the Seeds to the Royal Garden at *Paris.*

The Seeds and Roots of the two firſt Sorts are commonly uſed in Medicine by the Phyſicians of *Germany*; but are never preſcribed in *England.* They are eſteemed cleanſing and opening, and very good for the Stone and Gravel. From ſome Species of this Genus, Dr. *Boerhaave* conjectures that ſome of the Gums of *Aſia* and *Africa* are produced; as the *Ammoniac, Sagapenum, Opopanax,* and *Galbanum.*

Theſe Plants are propagated by Seeds, which ſhould be ſown in Autumn, as ſoon as poſſible after they are ripe; for if they are kept out of the Ground until the Spring, they ſeldom grow. Theſe Seeds ſhould be ſown in the Places where they are deſigned to remain; for as they have downright carroty Roots, they do not well bear tranſplanting. They require a moiſt light Soil, and thrive beſt in a ſhady Situation. The beſt Method is, to ſow the Seeds in Drills, which ſhould be made about eighteen Inches aſunder, and about half an Inch deep. In the Spring, when the Plants come up, they ſhould be carefully cleared of Weeds; and where the Plants are too cloſe, they ſhould be thinned, leaving them about ſix or ſeven Inches apart, that they may have room to grow; but the firſt Sort ſhould be allowed a greater Share of room, becauſe it grows very large, often riſing to the Height of ſix or ſeven Feet, and ſpreads its Leaves near two Feet each Way.

In two Years after the Seeds are ſown, the Plants (if they have thriven well) will be ſtrong enough to produce their Flower-ſtems, when they will begin to ſhoot up in *April*, and their Flowers appear in *June*; but their Seeds will not ripen till the End of *Auguſt* or *September.* Theſe Plants will continue ſome Years, and will annually produce Seeds; ſo that the Ground ſhould be carefully dug between the Plants every Spring, and conſtantly kept clean from Weeds, which is all the Culture the Plants will require.

ORIGANUM, Origany, or Baſtard Marjoram.

The *Characters* are;

It hath a labiated Flower, conſiſting of one Leaf, whoſe upper Lip is erect, roundiſh, and divided into two; but the under Lip is cut into three Segments: out of the Flower-cup ariſes the Pointal, attended, as it were, by four Embryoes, which afterward become ſo many roundiſh Seeds, incloſed in the Flower-cup: to which ſhould be added, The Flowers grow in ſcaly Spikes, ſomewhat reſembling thoſe of the Marjoram.

The *Species* are;

1. Origanum *vulgare ſpontaneum. J. B.* Wild Marjoram.
2. Origanum *onites. C. B. P.* Pot Marjoram.
3. Origanum *Heracleoticum, Cunila gallinacea Plinii. C. B. P.* Winter ſweet Marjoram, *vulgo.*
4. Origanum *ſylveſtre humile. C. B. P.* Dwarf wild Origany.
5. Origanum *ſylveſtre, foliis variegatis. Hort. Ed.* Wild Marjoram with variegated Leave,.
6. Origanum *Orientale, folio brunellæ glauco, flore albo. Vaill.* Oriental wild Marjoram, with a Self-heal-leaf, and white Flowers.

The firſt Sort here mentioned grows wild upon dry chalky Hills, and on gravelly Soils, in divers Parts of *England*; and is gathered by the People who ſupply the Markets with medicinal Herbs; ſo that it is rarely cultivated in Gardens.

The ſecond Sort was formerly more cultivated than at preſent: this was us'd as a Pot-herb for Soups, &c. but of late Years it has been almoſt neglected: it is ſaid to grow wild in ſome Parts of *England.*

The third Sort has the Appearance of common ſweet Marjoram; and, having a ſweet Smell, is cultivated in many Gardens near *London*, and brought to the Markets to ſupply the Want of ſweet Marjoram early in the Seaſon before the Marjoram (which is an annual Plant) can be procured; and is us'd by the People who make up Noſe-gays.

The fourth and fifth Sorts are preſerved as Varieties by ſome People, who uſe the fourth, many times, as a Pot-herb, inſtead of the ſecond.

The ſixth Sort was brought from the *Levant*; but is hardy enough to endure the ſevereſt Cold of our Climate in the open Air, provided it be planted upon a dry Soil.

Theſe Plants may be all propagated by ſowing their Seeds in the manner directed for Marjoram, and the Plants ſhould be treated in the ſame way: therefore I ſhall forbear repeating it in this Place: they may alſo be propagated by parting their Roots, or planting Cuttings, in the Spring, which, if watered and ſhaded, will take Root in a few Days, and multiply exceedingly.

Their Roots will abide ſeveral Years, and require no further Culture but to keep them clear from Weeds, and tranſplant them every Year, otherwiſe they will grow ſo large as to rot in the Middle for want of Air.

ORNITHOGALUM, Star of *Bethlehem.*

The *Characters* are;

It hath a Lily-flower, compos'd of ſix Petals or Leaves, ranged circularly, whoſe Centre is poſſeſs'd by the Pointal, which afterward turns to a roundiſh Fruit, which is divided into three Cells, and fill'd with roundiſh Seeds: to which muſt be added, It hath a bulbous or tuberoſe Root, in which it differs from Spiderwort.

The *Species* are;

1. Ornithogalum *anguſtifolium majus, floribus ex albo vireſcentibus. C. B. P.* Spiked Star of *Bethlehem*, with a greeniſh Flower.
2. Ornithogalum *umbellatum medium anguſtifolium. C. B. P.* Common Star of *Bethlehem*, with an umbellated Flower.
3. Ornithogalum *luteum. C. B. P.* Yellow Star of *Bethlehem.*
4. Ornithogalum *majus ſpicatum, flore albo. C. B. P.* The great white Star of *Bethlehem.*
5. Ornithogalum *ſpicatum, flore viridi-lacteſcente. C. B. P.* Spiked Star of *Bethlehem*, with a whitiſh-green Flower.

6. ORNITHOGALUM *luteum ſive pallidum majus. C. B. P.* Great yellow, or pale Star of *Bethlehem.*

7. ORNITHOGALUM *Neapolitanum. J. B.* Star of *Naples, vulgo.*

8. ONRITHOGALUM *anguſtifolium ſpicatum maximum. C. B. P.* The greateſt narrow-leav'd ſpiked Star of *Bethlehem.*

9. ORNITHOGALUM *ſpicatum ſeu comoſum, flore lacteo. C. B. P.* Spiked or branchy Star of *Bethlehem,* with a milk-white Flower.

10. ORNITHOGALUM *majus ſpicatum alterum. C. B. P.* Another great ſpiked Star of *Bethlehem,* commonly called the Star of *Conſtantinople.*

11. ORNITHOGALUM *ſpicatum album. C. B. P.* White ſpiked Star of *Bethlehem.*

12. ORNITHOGALUM *luteum, magno flore. C. B. P.* Yellow Star of *Bethlehem,* with a large Flower.

13. ORNITHOGALUM *Luſitanicum, capillaceo folio, luteum. Inſt. R. H.* Yellow *Portugueſe* Star of *Bethlehem,* with a capillaceous Leaf.

14. ORNITHOGALUM *ſpicatum unifolium, flore cæruleo odorato. Vir. Luſit.* Spiked Star of *Bethlehem,* with one Leaf, and a ſweet-ſmelling blue Flower.

15. ORNITHOGALUM *umbellatum maximum. C. B. P.* The greateſt umbellated Star of *Bethlehem,* commonly call'd the Star of *Alexandria.*

16. ORNITHOGALUM *umbellatum album medium latifolium. C. B. P.* White middle broad leav'd umbellated Star of *Bethlehem.*

17. ORNITHOGALUM *album minus. C. B. P.* Smaller white Star of *Bethlehem.*

18. ORNITHOGALUM *umbellatum, floſculis ex albo ſubcæruleis. C. B. P.* Umbellated Star of *Bethlehem,* with whitiſh-blue Flowers.

19. ORNITHOGALUM *Orientale villoſum, flore luteo magno. Tourn. Cor. Eaſtern* hairy Star of *Bethlehem,* with a large yellow Flower.

20. ORNITHOGALUM *Samium villoſum umbellatum album. Tourn. Cor.* Hairy white umbellated Star of *Bethlehem* of *Samos.*

21. ORNITHOGALUM *Luſitanicum unifolium humile, folio ovato acuminato, floribus ſpicatis cæruleis.* Low *Portugueſe* Star-flower, with one oval pointed Leaf, and blue Flowers growing in a Spike.

22. ORNITHOGALUM *Africanum, luteum odoratum, foliis cepaceis, radice tuberoſa. H. L.* Yellow ſweet-ſmelling *African* Star of *Bethlehem,* with Onion-leaves, and a tuberoſe Root.

23. ORNITHOGALUM *Virginianum luteum, foliis gramineis hirſutis. Petiver. Gaz.* Yellow *Virginian* Star-flower, with hairy Graſs-leaves.

24. ORNITHOGALUM *Africanum, plantaginis roſeæ folio, radice tuberoſa. Com. Hort. Amſt. African* Star-flower, with a Roſe-plantain-leaf, and a tuberous Root.

The eighteen Sorts which are firſt-mentioned, are very hardy; moſt of theſe grow wild in *Spain* and *Portugal:* the three firſt grow in ſeveral Places in the North of *England,* in Meadows and Woods: theſe increaſe very faſt by Off-ſets, eſpecially the ſecond and ſeventh Sorts, ſo as often to become troubleſome Weeds in ſuch Gardens where they are planted. The ſeventh Sort comes early to flower in the Spring: the Flowers are large, of a dirty-white Colour, ſtriped with green; ſo it makes but an indifferent Appearance; and the Seed-veſſels ſoon after ſwelling to a large Size, become ſo heavy, as to weigh down the Stalks, and lay them proſtrate on the Ground; at which time they are very unſightly; therefore theſe are not proper Ornaments for the Flower-garden: but as they will thrive in Woods, and under Trees, a few of them may be allowed a Place in any ſhady Wood-walks, or other abject Part of the Garden, for the ſake of Variety.

The fourteenth Sort produces blue Flowers ſomewhat like thoſe of the ſmall ſtarry Hyacinth; and flowers much about the ſame Seaſon; *viz.* the Latter-end of *February*, or the Beginning of *March*: the Flowers of this do not riſe above four or five Inches high; ſo the Roots of this ſhould be planted with others of the ſame Growth, near the Edges of the Borders, where they may remain three Years undiſturbed.

These Plants are propagated by Off-ſets, which their Roots do commonly produce in great Plenty. The beſt time to tranſplant their Roots is in *July* or *Auguſt*, when their Leaves are decay'd; for if they are remov'd late in Autumn, their Fibres will be ſhot out, when they will be very apt to ſuffer, if diſturb'd. They ſhould have a light ſandy Soil; but it muſt not be over-dung'd, which would cauſe their Roots to decay. They may be intermix'd with other bulbous-rooted Flowers in the Borders of the Pleaſure-garden, where they will afford an agreeable Variety, and continue in Flower a long time. Their Roots need not be tranſplanted oftener than every other Year; for if they are taken up every Year, they will not increaſe ſo faſt; but when they are ſuffered to remain too long unremoved, they will have ſo many Off-ſets about them as to weaken their blowing Roots. Theſe may alſo be propagated from Seeds, which ſhould be ſown and managed as moſt other bulbous-rooted Flowers, and will produce their Flowers in three or four Years after ſowing.

The fifteenth Sort here mentioned is very common in many Gardens near *London*; but it rarely produces any Flowers. This multiplies very faſt by Off-ſets, ſo as in few Years to ſtock a whole Garden. The Leaves and Bulbs of this Plant are very like thoſe of the Hyacinth of *Peru*; ſo that many Perſons have taken it for one of that Kind. Theſe Roots have been brought over from *Italy* in great Plenty of late Years, by the Perſons who import Orange-trees; but I have not yet heard, that any of them have produced Flowers in *England*.

The nineteenth and twentieth Sorts are, as yet, very rare in *England*: theſe grow in the *Archipelago*; and I have been informed by a very curious Gentleman, that they grow in great Plenty in the Iſland of *Zant*, from whence their Roots may be eaſily obtained, by the Ships that bring over the Currans. The beſt Method to bring them over, would be to have the Roots taken out of the Ground, ſoon after their Flower-ſtems and Leaves decay, and dry them in a ſhady Place: then they may be hung up in the Ship, in Nets (as is practiſed for Onions), to prevent their rotting by Moiſture, and to ſecure them from Vermin: and if they are four Months or longer out of the Ground, they will do very well, provided the Roots are ſound.

The Roots of the twenty-firſt Sort were ſent from *Portugal*, by *Robert More*, Eſq; who found them growing there wild, in the Year 1747. Theſe produced their Flowers the next Seaſon after they were planted in *England*; and have continued ſo to do every Year, about the Latter-end of *April*, or the Beginning of *May*.

The bulbous Root of this Flower is about the Size of thoſe of the common Snow-drop, and is in Shape very like them. Each of theſe produces one oval Leaf, in Shape like that of the Adder's-tongue, having no Footſtalk, but grows cloſe to the Ground. On the Side of the Leaf ariſes the Flower-ſtem, which ſeldom is more than two Inches high: theſe ſuſtain the Flowers, which grow upon ſhort Footſtalks, in form of a Spike: they are of a bright blue Colour; reſembling thoſe of the early blue ſtarry Hyacinth, but are ſmaller. Theſe fall away, without producing any Seeds in *England*; nor do the Bulbs ſend out Off-ſets, ſo that the Plant is yet pretty rare in the Gardens. Although the Flowers of this Plant are ſo ſmall as to make but little Appearance in the Garden, yet thoſe who are curious in collecting all the Variety of bulbous-rooted Flowers, eſteem it for the Difference there is in the Leaf and Flower from the other Species of this Genus.

The Roots are hardy, and may be treated in the ſame manner as thoſe of the other Species of this Genus; but they ſhould not be removed oftener than every third Year. The time for taking up of the Roots is ſoon after the Leaves are decayed; and they ſhould be planted again pretty early in the Autumn. They ſeem to thrive beſt in a looſe loamy Soil, which is not much dunged.

The twenty-ſecond Sort was formerly more common in the *Engliſh* Gardens, than at preſent. This Kind is more tender than either of the former; ſo ſhould be planted in Pots filled with freſh light Earth; and in Winter muſt be placed in an airy Glaſs-caſe, amongſt Sedums, Ficoides's, and ſuch other pretty hardy ſucculent Plants, which require a large Share of Air in mild Weather; and in Summer they may be removed out of the Houſe, and placed in a warm-ſheltered Situation; obſerving never to give theſe Plants much Water when they are not in a growing State, leſt it rot their Roots; but when they are growing freely, they muſt be frequently refreſhed with Water. Theſe Roots ſhould be tranſplanted every Year: the beſt time to perform this Work is ſoon after their Flower-ſtems are decayed, when the Roots will be in the moſt inactive State. When this is done the Off-ſets ſhould be carefully taken off, and each tranſplanted into a ſeparate ſmall Pot filled with light freſh Earth, and may be treated as the old Roots.

The twenty-third Sort is a Native of *America*, not only of the Continent, but alſo of the Iſlands there: Mr. *Baniſter* found it growing wild in *Virginia*, and ſent it to Mr. *Petiver*; and Mr. *Ray* has publiſhed it in the Catalogue of Plants made by Mr. *Baniſter* in *Virginia*: and Mr. *Cateſby* ſince found it growing in *Carolina*; and has exhibited a Figure of it in his Hiſtory of that Country: but I have, by Accident, had this Plant come up in the Earth which has come from *Jamaica* and *Antigua*, in which other Plants were ſent over, by which it appears to be common in both thoſe Iſlands.

This is a very humble Plant, never riſing above ſix Inches high: the Leaves are ſhaped like thoſe of the ſmalleſt Cypreſs-graſs, being triangular, long, and hairy: the Flowers are produced on ſlender Footſtalks ariſing from the Root, being naked; and on the Top are produced two or three ſmall yellow Flowers.

If this Plant is kept in the Stove, it will continue flowering great Part of the Year, and will alſo produce good Seeds: but if it is expoſed in the open Air, it will not flower, but in *July* and *Auguſt*; and theſe never produce Seeds, altho' the Roots will live abroad, if they are planted in a warm Situation: this Sort loves Warmth and Moiſture.

The twenty-fourth Sort is a Native of the *Cape of Good Hope*, from whence it was firſt brought to ſome curious Gardens in *Holland*, and ſome Years ſince was in ſeveral of the *Engliſh* Gardens; but was loſt for ſome Years, and hath been lately retrieved. This hath a large tuberous Root, in Shape like the Cyclamen: the Leaves are produced in Cluſters upon ſingle Fooſtalks from the Root, and ſpread on the Surface of the Ground, as do thoſe of the Cyclamen: the Flowers grow in a long Spike upon a naked Stem ariſing from the Root, having ſlender long Footſtalks: theſe are ſmall, of a greeniſh Colour at firſt, but afterward change white: there is no great Beauty in the Flowers of this Plant; but as the Leaves come out in the Autumn, and remain green all the Winter, it makes an agreeable Variety amongſt other Exotic Plants, during that Seaſon. This requires no other Culture but to plant the Roots in freſh light Earth in Pots; and in Winter they muſt be placed in a Green-houſe, or an airy Glaſs-caſe, with Ficoides, and other Plants of the ſame Country; where, if they are protected from Froſt, they will require no artificial Warmth. In Summer they muſt be expos'd with other Exotic Plants; but after the Leaves decay, the Roots ſhould not have too much Wet, leſt it rot them.

ORNITHOPODIUM, Bird's-foot.

The *Characters* are;

It hath a papilionaceous Flower; out of whoſe Empalement riſes the Pointal, which afterward becomes an hooked jointed Pod, for the moſt part waved, containing in each Joint one roundiſh Seed: to which muſt be added, That ſeveral Pods grow together in ſuch a manner as to reſemble the Foot of a Bird.

The *Species* are;

1. ORNITHOPODIUM *radice tuberculis nodoſa. C. B. P.* Bird's-foot with a knobbed Root.

2. ORNITHOPODIUM *majus. C. B. P.* The greater Bird's-foot.

3. ORNITHOPODIUM *ſcorpioides, ſiliqua compreſſa. T.* Caterpiller Bird's-foot, with a flat Pod.

4. ORNITHOPODIUM *portulacæ folio. Tourn.* Bird's-foot with a Purſlane-leaf.

Theſe Plants are propagated by ſowing their Seeds in the Spring upon a Bed of freſh light Earth, where they are to remain (for they ſeldom do well when they are tranſplanted); and, when the Plants come up, they muſt be carefully cleared from Weeds; and where they are too cloſe, ſome of the Plants ſhould be pulled out, ſo as to leave the remaining ones about ten Inches aſunder. In *June* theſe Plants will flower, and the Seeds will ripen in *Auguſt*. There is no great Beauty in them; but, for the Variety of their jointed Pods, they are preſerv'd by ſome curious Perſons in their Pleaſure-gardens; where, if their Seeds are ſown in Patches in the Borders, each Sort diſtinctly by itſelf, and the Plants thinn'd, leaving only two at each Patch, they will require no farther Care; and will add to the Variety, eſpecially where the Snail and Caterpiller Plants are preſerved, which are very proper to intermix with them. They are all annual Plants, which periſh ſoon after their Seeds are ripe.

OROBUS, Bitter-vetch.

The *Characters* are;

It hath a papilionaceous Flower, conſiſting of the Standard, the Keel, and the Wings; out of whoſe Empalement riſes the Pointal wrapt up in the Membrane, which afterward becomes a round Pod, full of oval-ſhap'd Seeds: to which muſt be added, That two Leaves joined together grow upon a Rib that ends in a Point.

The *Species* are;

1. OROBUS *ſylvaticus purpureus vernus. C. B. P.* Vernal purple Wood Bitter-vetch.

2. OROBUS *ſylvaticus noſtras. Raii Syn. Engliſh* Wood Bitter-vetch.

3. OROBUS *ſylvaticus, foliis oblongis glabris. Tourn.* Wood or Heath Peas.

4. OROBUS *ſylvaticus, foliis viciæ. C. B. P.* Wood Orobus, with Vetch-leaves.

5. OROBUS *latifolius repens, ſiliqua parva. Boerh. Ind.* Broad-leav'd creeping Orobus, with a ſmall Pod, commonly call'd *Venetian* Vetch.

6. OROBUS *ſylveſtris anguſtifolius, aſphodeli radice. C. B. P.* Narrow-leav'd wild Bitter-vetch, with an Aſphodel-root.

7. OROBUS *ſylvaticus, foliis nervoſis. Inſt. R. H.* Wild or Wood Bitter-vetch, with Leaves full of Nerves.

8. OROBUS *Creticus latifolius incanus. Inſt. R. H.* Broad-leav'd hoary Bitter vetch of *Candy*.

9. OROBUS *Orientalis latifolius villoſus, flore croceo. Tourn. Cor.* Broad-leav'd hairy *Eaſtern* Bitter-vetch, with a ſaffron-coloured Flower.

10. OROBUS *Americanus, fructu coccineo, nigra maculo notato. Inſt. R. H. American* Bitter-vetch, with ſcarlet Fruit, mark'd with a black Spot, commonly call'd wild Liquorice by the Inhabitants of *America*.

11. OROBUS *Americanus erectus, foliorum pinnis anguſtis, & ſubtus incanis, ſiliquis glabris. Houſt.* Upright *American* Bitter-vetch, with narrow Leaves, which are hoary underneath, and ſmooth Pods.

12. OROBUS *Americanus latifolius argenteus, flore purpureo. Houſt.* Broad-leav'd ſilvery *American* Bitter-vetch, with a purple Flower.

13. OROBUS *Americanus procumbens & hirſutus, flore purpureo. Houſt.* Trailing hairy *American* Bitter-vetch, with a purple Flower.

14. OROBUS *Americanus procumbens minimus anguſtifolius, flore coccineo. Houſt.* The leaſt narrow-leav'd trailing Bitter-vetch of *America*, with a ſcarlet Flower.

The firſt of theſe Plants was brought from *Germany*, where it grows in the Foreſts in great Plenty, as alſo about *Geneva*; but it is hardy enough to endure the Cold of our Climate in the open Air, provided it be planted in a dry Soil. This may be propagated either from Seeds, or by parting the Roots in the Spring. If you ſow the Seeds, you ſhould obſerve to put them pretty early into the Ground before the dry Weather comes on, otherwiſe the Seeds will not come up: as you ſhould alſo tranſplant the Roots juſt before they begin to ſhoot, or elſe their Flowers will be very weak. The Roots of this Plant will abide many Years, and ſpring up freſh every Year, and in *April* produce fine Spikes of purple pea-bloom Flowers, which are ſucceeded by ſtrait black Pods two Inches long, containing ſeveral roundiſh bitter Seeds.

The ſecond and third Sorts grow wild in Woods, and ſhady Places, in divers Parts of *England*; where, during their Seaſon of Flowering, they make an handſome Appearance; and when tranſplanted under Shrubs in a Garden, they will thrive extremely well, and produce great Quantities of Flowers every Spring.

Theſe were formerly recommended by Dr. *Liſter* to be ſown for Fodder, as a great Improvement; but I believe them not very proper for that Purpoſe, ſince they ſeldom thrive well when expos'd to the Sun, nor will they ever riſe to any conſiderable Height, their Branches trailing upon the Ground, unleſs they are ſupported; ſo that in a wet Seaſon they would be apt to rot.

The fourth Sort riſes to be two or three Feet high, and hath ſtrong upright Stalks; upon which, in *May*, are produced great Quantities of purple Flowers, which are ſucceeded by long ſtrait Pods, containing oblong bitter Seeds. The Root of this Plant will abide many Years, the Stalks decaying in Winter; but will ſpring up again the ſucceeding Year: it delights in a dry freſh Soil, and deſerves a Place in large Borders under the Shade of Trees, where it will thrive well, and make an handſome Appearance.

The fifth Sort was formerly preſerv'd in the Green-houſe as a tender Plant; but will endure the Cold of our Climate very well, if planted in a dry Soil; and thoſe Roots which are planted in the full Ground, will produce much ſtronger Flowers than thoſe preſerved in Pots. This Plant flowers in *April*; but ſeldom produces good Seeds in this Country.

Theſe Plants may all be propagated either from Seeds, or by parting of their Roots, in the manner directed for the firſt Sort; and if rightly diſpos'd in the Borders of a Garden, afford an agreeable Variety: and ſince they are hardy, requiring but little Culture, they deſerve a Place in every good Garden.

The four Sorts next-mentioned are very hardy Plants: theſe may be propagated by ſowing of their Seeds in the Spring, on a Border of freſh Earth, expoſed only to the morning Sun; and when the Plants come up, they ſhould be carefully cleared from Weeds, and thinned where they are too cloſe. The *Michaelmas* following they ſhould be taken up, and tranſplanted where they are deſigned to remain; which ſhould be in a ſhady Place, or under Trees in Wilderneſs-quarters, where theſe Plants will thrive exceeding well; and, when they flower in the Spring, will make an agreeable Variety in ſuch Places where better Plants will not live; which renders them worthy of a Place in large Gardens.

The tenth Sort is very common in the warmeſt Parts of *America*, *Aſia*, and *Africa*. The Seeds of this Sort are frequently brought to *England* from the *Weſt-Indies*, for their Beauty; being round and hard, of a bright ſcarlet Colour, with a black Eye, and are ſomewhat leſs than Peas. Theſe Seeds are by the Inhabitants of the Countries, where they naturally grow, ſtrung, and worn about their Necks for Ornament. And the Leaves of the Plant are ſometimes uſed inſtead of Liquorice, being eſteemed good for the dry Gripes.

This Plant twiſts itſelf round whatever Trees or Shrubs grow near it, and will riſe to the Height of ten or twelve Feet, and will continue ſeveral Years. The Flowers are produced on ſlender Fooſtalks, growing in a cloſe Spike or Bunch, which are ſhaped like thoſe of the Kidney-bean, and are of a pale-purple Colour: theſe are ſucceeded by ſhort thick Pods, in which are contained the Seeds.

The eleventh Sort was diſcovered by the late Dr. *Houſtoun* in *Jamaica*; as were alſo the three following Sorts diſcovered by the ſame Gentleman, at *La Vera Cruz* in the *Spaniſh Weſt-Indies*. Theſe five laſt mentioned Sorts, being Natives of warm Countries, are very tender; ſo muſt be preſerved in Stoves, otherwiſe they will not live in *England*. Theſe are propagated by Seeds, which ſhould be ſown early in the Spring, in ſmall Pots fill'd with light rich Earth, and plunged into an Hot-bed of Tanners Bark, obſerving frequently to moiſten the Earth, otherwiſe the Seeds will not grow (eſpecially thoſe of the tenth Sort, which are very hard, and will ſometimes remain a whole Seaſon in the Ground, where they are kept dry). When the Plants come up, they ſhould be carefully taken out of the Pots, and each tranſplanted into ſeparate ſmall Pots filled with rich Earth, and then plunged again into the Tan-bed, obſerving to ſhade them until they have taken Root; after which time they ſhould have freſh Air admitted to them every Day in warm Weather, and muſt be frequently watered. With this Management the Plants will make a great Progreſs, and in a few Weeks thoſe of the tenth Sort will reach the Glaſſes of the Hot-bed, unleſs the Frame be very high; ſo theſe ſhould then be taken out, and plunged into the Bark-bed in the Stove, where they may have room to grow. Theſe Plants ſhould be ſupported by Sticks, or placed near a Trellace, to which they ſhould be faſtened, otherwiſe they will trail about whatever Plants grow near them.

The other Sorts, being of humbler Growth, may be kept in the Hot-bed until *Michaelmas*, when the Nights begin to be cold; at which time they ſhould be removed into the Stove, and plunged into the Bark-bed, where they muſt be treated as other tender Exotic Plants; by which Method they may be preſerved thro' the Winter, and the following Summer they will produce Flowers: Theſe Plants are perennial, ſo that if they ſhould not perfect their Seeds, the Plants may be maintained for ſeveral Years.

ORYZA, Rice.

The *Characters* are;

It hath its Grains diſpos'd into a Panicle, which are almoſt of an oval Figure, and are covered with a thick Huſk, ſomewhat like Barley.

There is but one *Species* of this Plant; *viz.*

Oryza. *Matth.* Rice.

This Grain is greatly cultivated in moſt of the Eaſtern Countries, where it is the chief Support of the Inhabitants; and great Quantities of it are brought into *England*, and other *European* Countries, every Year, where it is in great Eſteem for Puddens, *&c.* it being too tender to be produc'd in theſe Northern Countries, without the Aſſiſtance of artificial Heat: but from ſome Seeds which were formerly ſent to *South-Carolina*, there have been great Quantities produced; and it is found to ſucceed equally as well there as in its native Country, which is a very great Improvement to our *American* Settlements.

This Plant grows upon moiſt Soils, where the Ground can be flow'd over with Water, after it is come up: ſo that whoever would cultivate it in *England* for Curioſity, ſhould ſow the Seeds upon an Hot-bed; and when the Plants are come up, they ſhould be tranſplanted into Pots fill'd with rich light Earth, and plac'd into Pans of Water, which ſhould be plunged into an Hot-bed; and as the Water waſtes, ſo it muſt, from time to time, be renewed again; in *July* theſe Plants may be ſet abroad in a warm Situation, ſtill preſerving the Water in the Pans, otherwiſe they will not thrive; and toward the Latter-end of *Auguſt* they will produce their Grain, which will ripen tolerably well, provided the Autumn proves favourable.

OSIER. *Vide* Salix.

OSMUNDA, The Oſmund Royal, or flowering Fern.

This is one of the Kinds of Fern which is diſtinguiſh'd from the other Sorts, by its producing Flowers on the Top of the Pedicle of the Leaves; whereas the others, for the moſt part, produce them on the Back of their Leaves.

There is but one Kind of this Plant, which grows wild in *England*; but there are ſeveral Sorts of them which grow in *America*: but as they are ſeldom kept in Gardens, I ſhall not enumerate their Species.

The common Sort grows on Bogs in ſeveral Parts of *England*; therefore whoever hath an Inclination to tranſplant it into Gardens, ſhould place it in a moiſt ſhady Situation, otherwiſe it will not thrive.

OSTEOSPERMUM, Hard-ſeeded Chryſanthemum.

The *Characters* are;

The Flower hath an hemiſpherical Empalement, which is ſingle, and cut into many Segments: the Flower is compoſed of ſeveral Hermaphrodite Flowers in the Diſk, which are tubulous, and cut at the Brim into five Parts: theſe are ſurrounded by ſeveral Female Flowers, which are radiated, each having a long narrow Tongue, which is quinquefid: the Hermaphrodite Flowers have each five ſlender ſhort Stamina; *theſe are barren: the Female Flowers have each a globular Pointal, which afterward becomes one ſingle hard Seed.*

The *Species* are;

1. Osteospermum *foliis oppoſitis palmatis. Hort. Cliff.* Hard-ſeeded Chryſanthemum, with handed Leaves growing oppoſite.

2. Osteospermum *foliis ovalibus obſolete ſerratis. Lin. Hort. Cliff.* Hard-ſeeded Chryſanthemum, with oval Leaves, which are ſlightly ſaw'd.

3. Osteospermum *foliis lanceolatis acute ſerratis, petiolis decurrentibus.* Hard-ſeeded Chryſanthemum, with ſpear-ſhap'd Leaves, which are cut into ſharp Segments, and a wing'd Footſtalk.

4. Osteospermum *ſpinis ramoſis. Lin. Hort. Cliff.* Hard-ſeeded Chryſanthemum, with branching Spines.

This Genus of Plants was, by Dr. *Tournefort*, intituled *Chryſanthemoides*, from its Affinity to the *Chryſanthemum*; and, by Dr. *Boerhaave*, *Chryſanthemoides Oſteoſpermum*. Both of which, being compound Names, have been rejected by Dr. *Linnæus*, who has given the Tittle of *Oſteoſpermum* to it.

The firſt Sort is a Native of *America*, growing in *Virginia* and *Carolina*, in low moiſt Ground. This Sort dies to the Root every Autumn, and riſes again the following Spring; and when growing on a moiſt rich Soil, the Shoots will riſe to the Height of five or ſix Feet, and are garniſh'd with very large Leaves, placed by Pairs oppoſite, which are ſhaped ſomewhat like thoſe of the

Plane-tree; from whence it hath been by ſome Authors intituled *Chryſanthemum platani folio*. The Flowers are produced at the Extremity of the Shoots, which are ſhap'd like thoſe of the Sun-flower; but being ſmall, do not make much Appearance. This Sort never produces any Seeds in *England*; ſo can only be propagated by parting of the Roots: but this ſhould not be done oftener than every third Year. The beſt Seaſon for this, and for tranſplanting of the Roots, is in *October*, ſoon after the Shoots decay. Theſe Roots ſhould be planted in light rich Earth, and ſhould have a moiſt Situation, where they will thrive extremely well: but in dry Ground, if they are not duly water'd in dry Weather, they will make no Progreſs, and frequently decay in hot Weather. It will endure the Winter's Cold very well in the open Air.

If the Seeds of this Plant are procured from *America*, they ſhould be ſown on a Bed of rich Earth; and in dry Weather they ſhould be water'd. Theſe Seeds generally remain in the Ground a whole Year, before the Plants appear. When the Plants come up, they ſhould be treated in the ſame manner as hath been directed for the old Plants.

The ſecond, third, and fourth Sorts are Natives of the Country about the *Cape of Good Hope*, in *Africa*. The ſecond Sort grows to the Height of ſix or eight Feet, and becomes woody in the Stem. The Leaves of this Sort are of an oval Figure, ſlightly indented on the Edges, and are cover'd with a white Meal. This Plant ſeldom flowers in *England*.

The third Sort grows like the ſecond; but the Leaves are more pointed, of a green Colour, and deeply ſaw'd on the Edges: the Footſtalks of the Leaves are border'd, and the Leaves are deeply vein'd. This produces Tufts of yellow Flowers at the Extremity of the Shoots: it flowers in the Winter and Spring.

The fourth Sort is a low ſhrubby Plant, which ſeldom riſes above three Feet high, and divides into many Branches: the Ends of the Shoots are beſet with green Spines; which branch out from the Leaves, which are very clammy, eſpecially in warm Weather. The Leaves are long and narrow, and ſet on without any Order. The Flowers are produc'd ſingle, at the Ends of the Shoots, which are yellow, and appear in *July* and *Auguſt*.

Theſe three Sorts are too tender to live in the open Air in *England*; ſo are placed in the Green-houſe in *October*, and may be treated in the ſame manner as Myrtles, and other hardy Green-houſe Plants, which require a large Share of Air in mild Weather: and in the Beginning of *May* the Plants may be remov'd into the open Air, and placed in a ſhelter'd Situation during the Summer-ſeaſon. The ſecond and third Sorts muſt have Plenty of Water, being very thirſty Plants; but the fourth Sort muſt have it given but moderately in Winter.

Theſe Plants are propagated by Cuttings, which may be planted in any of the Summer-months, upon a Bed of light Earth, and ſhould be water'd and ſhaded until they have taken Root. Theſe may remain in the Beds till they have gotten very good Roots; when they muſt be taken up, and planted in Pots: for if they are ſuffer'd to ſtand long, they will make ſtrong vigorous Shoots, and will be difficult to tranſplant afterward; eſpecially the ſecond

cond and third Sorts; but there is not ſo much Danger of the fourth, which is not ſo vigorous, nor ſo eaſy in taking Root, as the other. During the Summer-ſeaſon the Pots ſhould be frequently remov'd, to prevent the Plants from rooting through the Holes in the Bottom of the Pots, into the Ground, which they are very apt to do when they continue long undiſturbed, and then they ſhoot very luxuriantly; and, on their being remov'd, theſe Shoots, and ſometimes the whole Plants, will decay.

OSYRIS, Poets Caſia.

The *Characters* are;

It is Male and Female in different Plants: the Empalement of the Flower is of one Leaf, which is divided into three acute Segments: the Flower hath no Petals; but thoſe on the Male Plants have three ſhort Stamina; *and thoſe on the Female have a roundiſh Pointal, which afterward changes to a ſingle globular Berry, having one Seed.*

We have but one *Species* of this Plant; *viz.*

Osyris *fruteſcens baccifera. C. B. P.* Shrubby berry-bearing Poets Caſia: and by ſome, Red-berried ſhrubby Caſia.

This is a very low Shrub, ſeldom riſing above two Feet high, having lignous Branches, which are garniſh'd with long narrow Leaves, of a bright Colour: the Flowers appear in *June*, which are of a yellowiſh Colour; and are ſucceeded by Berries, which at firſt are green, and afterward turn to a bright-red Colour, ſomewhat like thoſe of Aſparagus.

This Plant grows wild in the South of *France*, in *Spain*, and ſome Parts of *Italy*, by the Side of Roads, as alſo between the Rocks; but is with great Difficulty tranſplanted into Gardens; nor does it thrive after being removed: ſo that the only Method to obtain this Plant is, to ſow the Berries where they are to remain. Theſe Berries commonly remain a Year in the Ground before the Plants appear, and ſometimes they will lie two or three Years: ſo that the Ground ſhould not be diſturbed under three Years, if the Plants do not come up ſooner. Theſe Seeds muſt be procur'd from the Places where the Plants naturally grow; for thoſe which have been brought into Gardens never produce any, and it is with great Difficulty they are preſerv'd alive.

OTHONNA, *African* Rag-wort.

The *Characters* are;

It hath a compound Flower, conſiſting of many Florets and Half-florets, incloſed in one common Empalement: the Florets are Hermaphrodite; theſe are tubulous, and indented at the Brim: the Half-florets are Female; theſe are ſtretched out on one Side with a narrow Segment, like a Tongue, beyond the Empalement: the Hermaphrodite Flowers have each five ſmall Stamina: *the Female Flowers have an oblong Pointal, which afterward turns to a ſingle oblong Seed crowned with a Down.*

The *Species* are;

1. Othonna *foliis infimis lanceolatis integerrimis, ſuperioribus ſinuato-dentatis. Lin. Hort. Cliff.* Shrubby *African* Ragwort, with an Hartſhorn-leaf.

2. Othonna *foliis lanceolatis integerrimis. Lin. Hort. Cliff.* Shrubby *African* Ragwort, with intire ſucculent Leaves.

3. Othonna *foliis pinnatifidis, laciniis linearibus parallelis. Lin. Hort. Cliff.* Shrubby *African* Ragwort, with Leaves like umbelliferous Wormwood.

4. Othonna *foliis multifidis linearibus. Flor. Leyd.* Shrubby *Afri-*

can Ragwort, with Samphire-leaves.

Theſe Plants are rang'd in the Genus of Ragwort by moſt of the Writers on Botany, till Dr. *Boerhaave*, in his Index of the *Leyden Garden*, ſeparated them into a diſtinct Genus, under the Title of *Doria:* but Dr. *Linnæus* has ſince ſeparated theſe Species from the others, and applied this Title of *Othonna* to them.

They are all of them Natives of the Country near the *Cape of Good Hope*; ſo will not live through the Winter in *England*: therefore they are planted in Pots, and placed in the Green-houſe in the Winter. They are ſhrubby Plants, which grow about three or four Feet high in this Country; but in the native Place of their Growth, they riſe much higher. Theſe grow very eaſily from Cuttings; which will take Root very ſoon, if planted in a ſhady Border, during any of the Summer-months; and when they have made good Roots, they ſhould be taken up, and potted; becauſe if they are ſuffer'd to ſtand long in the Border, their Roots will extend to a great Diſtance, and they will make vigorous Shoots, ſo that they cannot be tranſplanted after with any Safety. In all other reſpects theſe muſt be treated in the ſame manner, as hath been directed for *Oſteoſpermum*.

As there is little Beauty in the Flowers of theſe Plants, ſo they are not generally eſteem'd: but, where there is room in the Green-houſe, if a Plant or two of each Kind are preſerv'd there, they will add to the Variety, by their different-ſhaped Leaves, which they retain the whole Year, but eſpecially the third Sort.

OX-EYE. *Vide* Buphthalmum.

OXYACANTHA. *Vide* Berberis.

OXYS, Wood-ſorrel.

The *Characters* are;

It hath a bell-ſhaped Flower conſiſting of one Leaf, having its Brim wide expanded, and cut into ſeveral Diviſions: the Pointal, which riſes from the Flower-cup, becomes an oblong, membranaceous Fruit, divided into five ſeminal Cells, opening outward from the Baſe to the Top, and incloſing Seeds which ſtart from their Lodges, by reaſon of the elaſtic Force of the Membrane which involves them.

The *Species* are;

1. Oxys *flore albo. Tourn.* Common Wood-ſorrel, with a white Flower.
2. Oxys *flore purpuraſcente. Tourn.* Wood-ſorrel with a purpliſh Flower.
3. Oxys *lutea. J. B.* Wood-ſorrel with a yellow Flower.
4. Oxys *lutea Americana erectior. Tourn.* Upright yellow Wood-ſorrel of *America*.
5. Oxys *bulboſa Africana rotundifolia, caulibus & floribus purpureis amplis. Hort. Amſt.* Round-leav'd *African* Wood-ſorrel, with large purple Flowers.
6. Oxys *bulboſa Æthiopica minor, folio cordato, flore ex albido purpuraſcente. Hort. Amſt. Ethiopian* Wood-ſorrel with an heart-ſhaped Leaf, and a purpliſh-white Flower.
7. Oxys *Americana, flore rubro, fibroſa radice. Inſt. R. H. American* Wood-ſorrel, with a red Flower, and a fibroſe Root.
8. Oxys *lutea fruteſcens Americana, trifolii bituminoſi facie. Plum. Cat.* Yellow ſhrubby *American* Wood-ſorrel, with the Face of ſtinking Trefoil.
9. Oxys *purpurea Virginiana, radice ſquamata. Inſt. R. H.* Purple Wood-ſorrel of *Virginia*, with a ſcaly Root.
10. Oxys *bulboſa Africana rotundifolia, caulibus virentibus, floribus amplis purpureis. Breyn. Cent.* Bulbous-rooted *African* Wood-ſor-

rel, with round Leaves, green Stalks, and large purple Flowers.

11. Oxys *lutea annua, floribus dentatis. Feuillé. Obſ.* Yellow annual Wood-ſorrel, with indented Flowers.

12. Oxys *roſeo flore, erectior, vulgo Cullè. Feuillée. Obſ.* Upright Wood-ſorrel, with a roſe-colour'd Flower, vulgarly call'd Cullè.

13 Oxys *ampliſſimo flore. Feuillée. Obſ.* Wood-ſorrel with the largeſt yellow Flower.

14. Oxys *luteo flore, radice craſſiſſima. Feuillée. Obſ.* Wood-ſorrel with yellow Flowers, and a very thick Root.

The firſt Sort grows wild in Woods, and other ſhady Places, in divers Parts of *England*; and flowers in *April* and *May*. This is the Sort which is directed by the College of Phyſicians of *London* to be uſed in Medicine; but the Markets are generally ſupplied with the fourth Sort, which is not near ſo good, having very little Taſte: but the People who cultivate medicinal Plants for the Market, have propagated this Plant in their Gardens, becauſe it grows tall, and branches out greatly; ſo that they can readily gather and tie it up in Bunches for Sale; whereas the true Sort grows cloſe to the Ground, and each Leaf riſes with a Footſtalk from the Root, which renders it troubleſome to gather in Quantities; but thoſe who uſe it in Medicine ſhould be careful to have the true Sort: the Time for which is always in the Spring; whereas the other Kind is never brought to Market till the Middle of Summer.

The ſecond Sort is a Variety of the firſt, differing only in the Colour of the Flower. This is found wild in the North of *England*, and is preſerv'd as a Variety by thoſe Perſons who are curious in Botany: but there is no Difference in the Taſte of this from the common Sort. Theſe two Sorts are abiding Plants, and multiply greatly by their creeping Roots, as alſo by Seeds. They ſhould be planted in a moiſt ſhady Border, either early in the Spring, or at *Michaelmas*, that they may be rooted before the Froſt comes on. When the Plants are once eſtabliſh'd in the Border, they will ſcatter their Seeds, and increaſe greatly. This common Wood-ſorrel is a much more grateful Acid in Sallads, than the common Sorrel; for which Purpoſe a Border of it ſhould not be wanting in the Kitchen-garden.

The third Sort is an abiding Plant, and increaſes greatly by its trailing Branches, which put out Roots at every Joint; as alſo by its Seeds, which are caſt abroad, when ripe, by the Elaſticity of the Veſſels in which they are contained, which renders it difficult to ſave the Seeds: for when they are ripe, on the firſt Touch, the Pods burſt, and throw out the Seeds. This is tender, and muſt be ſhelter'd under a Frame in Winter, otherwiſe it will not abide the Froſts, when they are very ſevere.

The fourth Sort is an annual Plant. This was originally brought from *North-America*; but whereever it is introduced, and permitted to ſcatter its Seeds, it will maintain itſelf without any further Care, it being a very hardy Plant; and is now become more common than our own Sort in the *London* Markets.

The fifth and ſixth Sorts are preſerv'd in ſome curious Gardens for Variety. The fifth Sort produces large purple Flowers, which make a very pretty Appearance, and continue in Beauty a long time during the Winter-ſeaſon, which renders it worthy of a Place in every Collection of Plants. The ſixth Sort hath not much Beauty in its Flowers; but is planted in curious Gardens for Variety. Theſe two Sorts have bulbous Roots, which increaſe pretty faſt (eſpecially the ſixth), by which they are eaſily propagated. Theſe muſt be planted in Pots fill'd with freſh light Earth: and in Winter they ſhould be placed under a common Hot-bed-frame, where they ſhould have as much free Air as poſſible in mild Weather; but they muſt be ſhelter'd from Froſt, otherwiſe they will not live in this Country. InSummer they muſt be expos'd in a ſhady Situation, and in dry Weather muſt be often refreſhed with Water; but when their Leaves are decay'd, it ſhould be given ſparingly.

The ſeventh, ninth, and tenth Sorts may be treated in the ſame manner as the former: theſe are preſerv'd in curious Gardens for the ſake of Variety.

The eighth Sort was diſcover'd by Father *Plumier* in ſome of the *French* Settlements in *America*: it was alſo found by the late Dr. *Houſtoun* near *La Vera Cruz*; where it was growing in great Plenty. This Sort riſes to the Height of two Feet or more, and becomes a ſmall Shrub; but it hath very little Acidity in the Leaves. This is tenderer than either of the former Sorts; wherefore it ſhould be kept warmer in Winter, otherwiſe it will not live in this Country.

The eleventh Sort is an annual Plant, which is cultivated in all the Gardens of *Lima* and *Peru* in the *Spaniſh Weſt-Indies*, for its grateful acid Taſte; it being much uſed by the Inhabitants of thoſe Places in all their Sawces. This Sort grows larger than the common upright *American* Kind: the Flowers are yellow, edged with purple.

The twelfth Sort grows plentifully in *Chili*, in the *Spaniſh Weſt-Indies*. It hath beautiful roſe-colour'd Flowers, and grows about the ſame Height as the common upright *American* Sort.

The thirteenth Sort ſeldom riſes above two Inches high, and doth not branch as do the former Kinds; this hath very large yellow Flowers: it grows plentifully on the Borders of the River of *Plate*.

The fourteenth Sort hath very large thick Roots, out of which come up the Leaves, which are of a bright-green Colour on their Upper-ſide, and of a violet Colour underneath. This grows on all the Mountains of *Peru*.

All theſe Sorts, being Natives of warm Countries, are ſomewhat tenderer than thoſe before-mentioned; for which Reaſon they muſt be placed in a warm Green-houſe in Winter: but in Summer they may be expos'd to the open Air; and muſt be plentifully watered in dry Weather. All theſe Plants will produce Seeds in this Country, by which they may be propagated.

The END *of the* SECOND VOLUME.